AREA PLANS BUSY 2½-DAY CHICAGO MEETING THIS WEEK p. 19

MARCH 14, 1966

RAILWAY AGE

WEEKLY

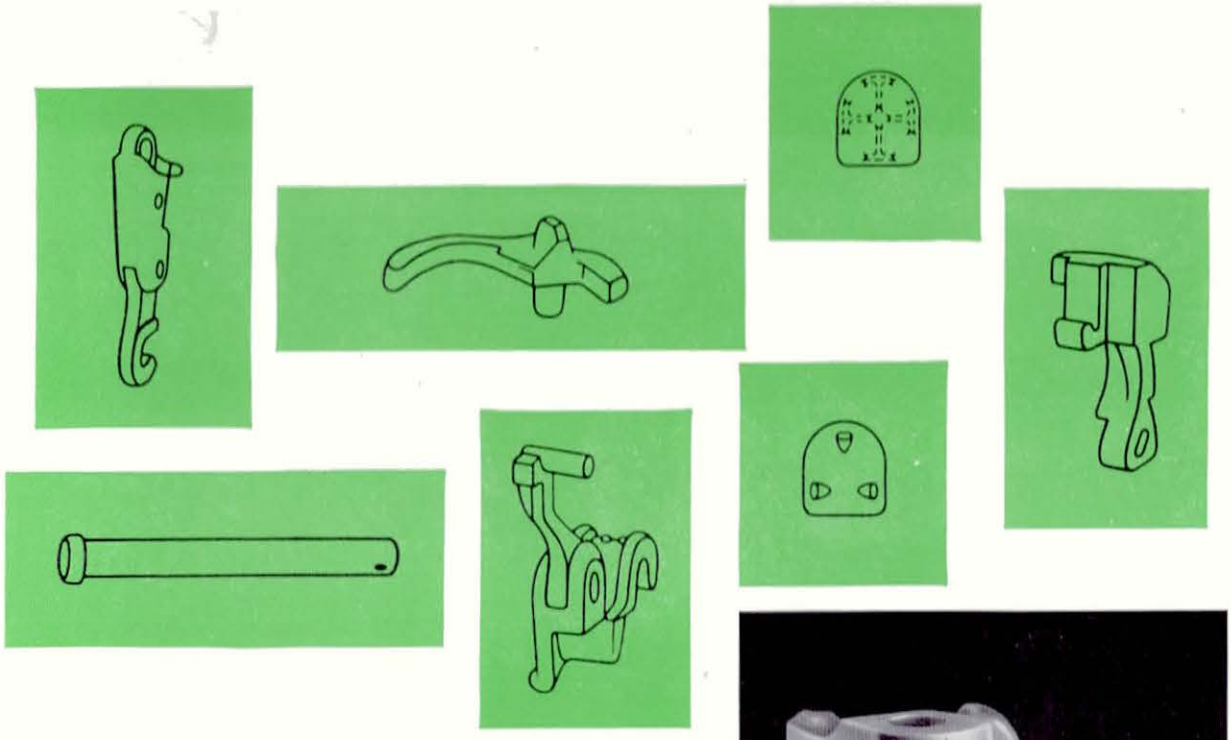
McCARTNEY LIBRARY
GENEVA COLLEGE

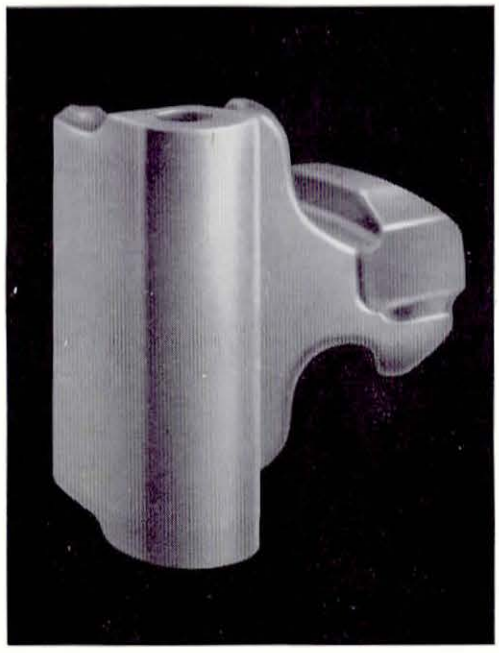
PROGRESS REPORT ON AAR ENGINEERING RESEARCH

p. 20

RF&P MODERNIZES POTOMAC YARD

p. 25





how to make older couplers feel young again

(without the use of magic)

CALL ASF—Order a knuckle or any other part—for **any** make of coupler. (Only ASF furnishes **every** type of AAR approved coupler.)

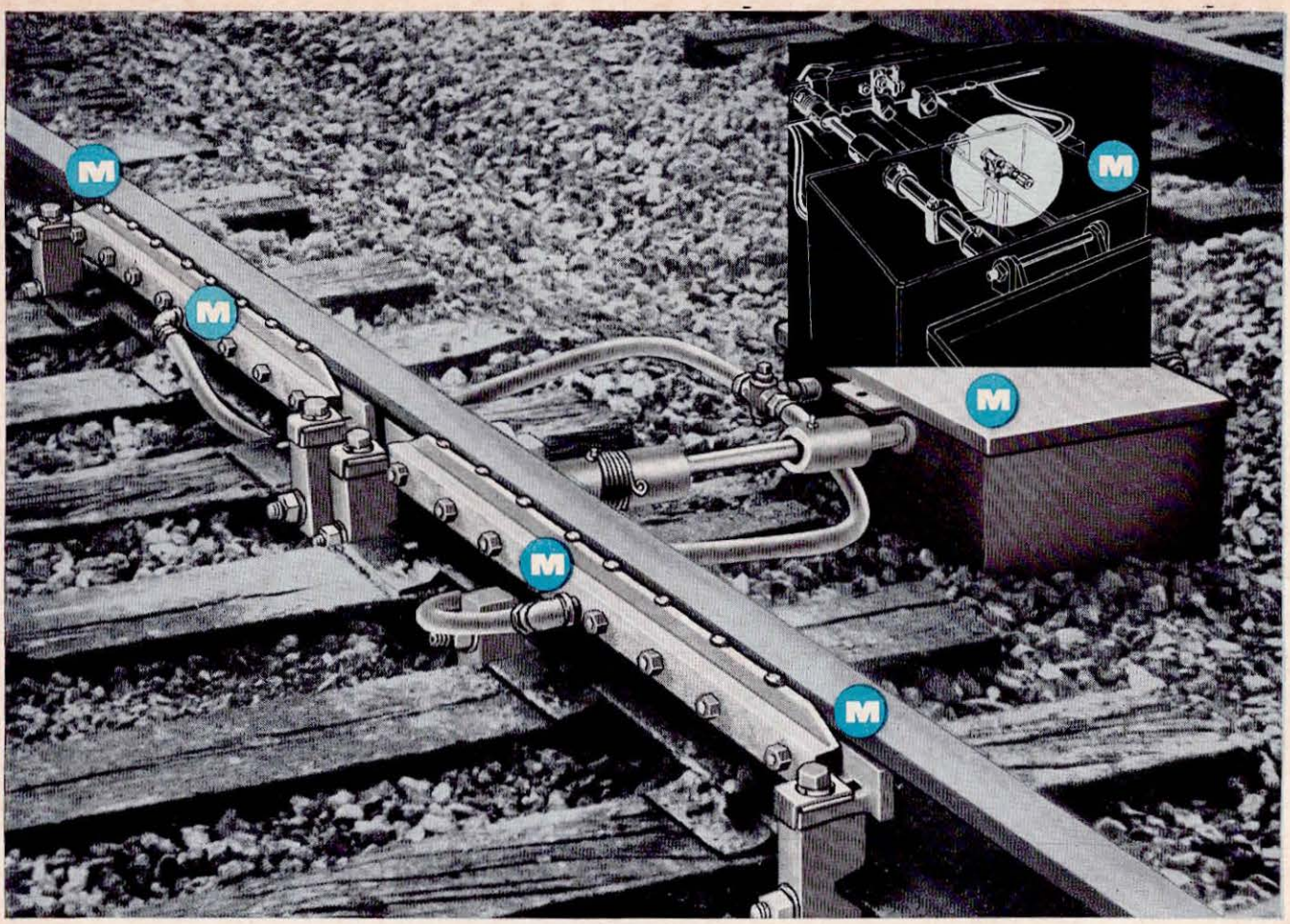
YOU'LL GET—a part that exceeds AAR specifications. The toughest, most rugged part that can be built. Fast delivery from our complete inventory.

THEN INSTALL—and PRESTO!!
an older coupler feels young again.

TO AVOID ANY HOCUS POCUS, call your ASF representative, or write American Steel Foundries, 1005 Prudential Plaza, Chicago, Illinois 60601. You'll be pleased, and so will we.

ASF **American Steel Foundries**
ONE OF THE Amsted INDUSTRIES

Circle 1 on reader service card



Meco stands for LEADERSHIP

Far and away the MOST often installed (5 to 1) are

MECO RAIL & FLANGE LUBRICATORS

"Mecolubrication" is the overwhelming choice because it leads in performance advantages and delivers them at the lowest installed and maintained cost. Meco also stands for "Meconomizer," the newest advancement in quick adjusting, pressure relief valves that automatically end messy, excess grease waste on the tracks.

The whole story of the World-Wide Leadership of Mecolubrication is told in the new booklet

PRODUCTS of PROGRESS

Your complimentary copy may be had by asking your Poor & Company Representative . . . or write

POOR & COMPANY

RAILWAY PRODUCTS DIVISION/80 E. Jackson Blvd., Chicago, Ill. 60604

B-12448

PRODUCTS OF PROGRESS: P. & M. PRODUCTS: IMPROVED FAIR Rail Anchors; RAIL JOINT PRODUCTS: Rajo Rail Joints, Insulated Joints, Compromise Joints, Fibre Renewal Sets; MAINTENANCE EQUIPMENT PRODUCTS: Meco Rail & Flange Lubricators, Richter Blue Flag Derails, Southworth Brush Cutters, Mack Reversible Switch Point Protectors, Meco Power Rail Layers; PEERLESS EQUIPMENT PRODUCTS: Peerless Draft Gears; RAIL TITAN BATTERIES.

Circle 2 on reader service card

Here at Fairmont, we're rolling out HY-RAILS by the trackful!

Typical installation on a Checker station wagon.

Fairmont also supplies Heavy Duty HY-RAIL equipment for 1½ to 2½ ton trucks.

Railroaders are ridin' "HY" more than ever. Why? Because HY-RAILS can be applied to vehicles quickly, at moderate cost. And Fairmont HY-RAILS have all these features . . . • Rugged construction • Safest operation • Sturdy mounting • Dependable performance • Easy load adjustment • Identical front and rear assemblies • Independent rubber cushion torque units. Fairmont equipment is now available for lease—call or write for details.

Fairmont

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINN.

Circle 3 on reader service card

RAILWAY AGE March 14, 1966 • Vol. 160, No. 10

THIS WEEK

19 AREA plans busy Chicago meeting
Special features, plus reports of 22 committees, highlight the American Railway Engineering Association meeting.

PROGRESS REPORT

20 What the AAR's Research Center has been doing
A discussion, by the AAR's engineering research director, of some of the Center's most significant findings.

25 RF&P modernizes Potomac hump yard
To speed switching, the road has begun a $1.2-million revamping of the yard's northbound classification tracks.

30 New products for engineers
A three-page roundup of some of the equipment specially designed to help railway engineering forces.

52 The Action Page—More science needed in track inspection
The tools are at hand for putting track inspection on a more scientific basis than has heretofore prevailed.

Departments

43 As the Publisher Sees It
47 Freight Carloadings
12 Lines on Labor
8 Monday Morning Report
47 New Equipment
30 New Products Report
36 People in the News
34 Railroad Association Calendar
47 Railway Market
7 Short and Significant
38 Supply Trade
52 The Action Page
33 Watching Washington
11 Week at a Glance
48 You Ought to Know

EDITORIAL STAFF
Editorial and Executive Offices
New York, N.Y. 10007, 30 Church St.

ROBERT G. LEWIS: Publisher
LUTHER S. MILLER: Executive Editor

Managing Editor: Fred C. Miles
Traffic-Transportation: Gardner C. Hudson
News Editor: Edward F. Donlon
Transit Editor: Joseph Asher
Associate Editor: James P. Shuman
Mechanical:
C. L. Combes F. N. Houser
Art Director: Joel Petrower
Art Assistant: Maurice Mates
Editorial Assistant: June Meyer
Director of Research: H. B. Bolander
Librarian: Edith C. Stone
Production: Fred B. Hecht

Chicago, Ill. 60604, 14 E. Jackson Blvd.
Western Editor: John D. Mitros
Senior Editor: Gus Welty
Mechanical: Norman E. Gillespie
Engineering:
M. H. Dick R. E. Dove
Signaling & Communications:
Robert W. McKnight Eugene F. Leonard
Editorial Assistant: Wanda Brown

Washington, D.C. 20004,
National Press Bldg.
Washington Editor: Walter J. Taft

London, W.C. 2, England, 4, Talbot House; 98 St. Martin's Lane
International Editors:
Geoffrey Wilson John Levett
GEORGE DUSENBURY: Editorial Director

C. J. FISHER: Vice President—Sales, New York

For list of sales offices, see index page

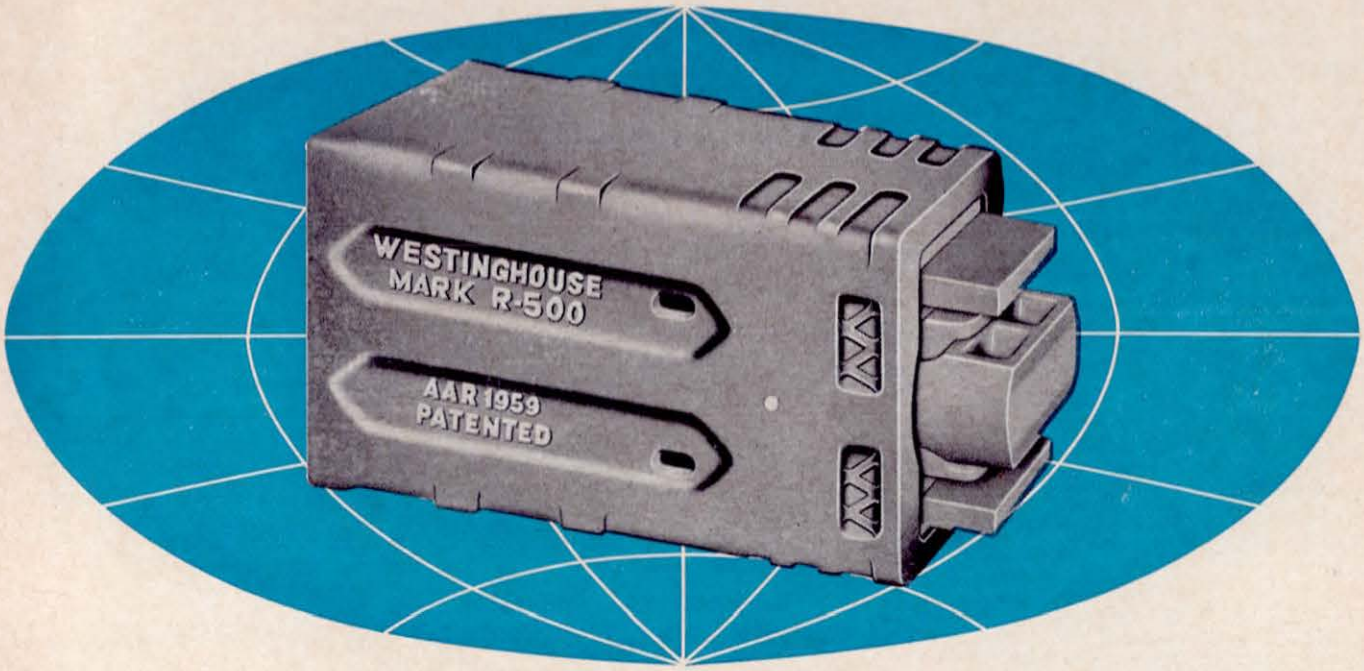
Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.
Published weekly (except for four issues combining two-in-one) by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn.
Railroad employees' subscription rate: U. S. possessions, Canada and Mexico, $6 one year, $8 two years, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year. In other countries, $15 a year. Single copies 60¢ except special issues. Address all subscriptions, changes of address and correspondence concerning them to Subscription Dept., Railway Age, Emmett St., Bristol, Conn. 06011.
Change of address should reach us three weeks in advance of next issue date. Send old address with new, enclosing, if possible, your address label. Post Office will not forward copies unless you provide extra postage.

Circulation Dept.; John Rogers, Circulation Manager, 30 Church St., New York, N. Y. 10007. POSTMASTER—SEND FORM 3579 TO EMMETT ST., BRISTOL, CONN. 06011.
Printed at the Wilson H. Lee Co., Orange, Conn. 06477. Second-class postage paid at Orange, Conn. and at additional mailing offices.

MARK R-500

Highest Capacity Rubber-Friction

DRAFT GEAR



with A.A.R. UNCONDITIONAL APPROVAL

The Westinghouse Mark R-500 Rubber-Friction Draft Gear substantially exceeds A.A.R. Specification M-901E, and is today's highest capacity rubber-friction draft gear unconditionally certified under this specification.

The Westinghouse Mark R-500 was the first rubber-friction draft gear to be awarded UNCONDITIONAL APPROVAL under Specification M-901E.

Featured in the Mark R-500 is a service-proven friction clutch which acts against a combination heavy coil steel spring and Butyl rubber inner core, assuring high capacity with low reaction. This combination reduces maintenance costs and keeps cars in revenue service that might otherwise be bad-ordered.

SPECIFY THE MARK R-500 FOR YOUR CARS!

PRI MEMBER

CARDWELL WESTINGHOUSE COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS 60604, U.S.A. • TELEPHONE: 312-427-5051

INTERNATIONAL DIVISION SAME ADDRESS

Circle 4 on reader service card

SHORT AND SIGNIFICANT

GN brakemen start voting: BRT vs. ORC&B

By late March or early April the Brotherhood of Railroad Trainmen will know if Great Northern employees are ready to give the BRT a foothold. The Trainmen are challenging the Order of Railway Conductors & Brakemen for the representation rights for road brakemen. Voting began March 9 and will continue through March 22, with about 1,140 eligible to cast ballots. GN at present is one of a comparatively few roads where the BRT is virtually shut out of representation (the ORC&B and the Switchmen's Union of North America hold the major train-service contracts). BRT people think they have a good chance of cracking the road—but the ORC&B is predicting a "total victory" in the contest.

●

PRR and NYC get a big unit-train coal contract

A unit-train service to provide faster and more economical coal shipments from mines in Ohio to electric power generating plants in the Detroit area will be inaugurated next month by the Detroit Edison Co. and the Pennsylvania and New York Central. PRR will originate movement of two million tons of coal a year from three mines in southeastern Ohio for the Edison Company's River Rouge plant. The coal will move over PRR lines to Toledo where it will be transferred to NYC for delivery to the utility. In July 1967, unit train movement of coal will be extended to the Trenton Channel plant, another of Edison's six power-generating plants in the Detroit area. More than $5 million will be spent to build a coal-handling facility there.

●

NYC to offer new rates on animal feeds

New York Central's successful experiment with low-cost whole corn rates has prompted the road to offer new scales of freight rates on animal feed ingredients. The new rates, to be published soon, will extend the benefits of bare bones rail services to processors serving poultry producing and dairy feeding regions of New England and the Middle Atlantic states. Rates on the feed products will be directly related to the whole corn mileage rates that Central introduced in Official Territory in July 1964. NYC said success of the corn rates produced widespread demand from animal feed processors in the same region for comparable treatment on grain feeds.

●

Melpar wins contract for high-speed train work

The Department of Commerce has announced award of a two-year contract to Melpar, a WABCO affiliate, in connection with the government's high-speed rail program. The $1 million contract applies to the study of techniques in instrumentation, measurement, evaluation and simulation employed in development of other high-speed systems such as aircraft and missiles. Said Alan S. Boyd, under secretary for transportation: "No one has gone into this subject as thoroughly as this study contemplates. These trains of the future must provide smoother, safer rides at high speeds."

●

ICC Examiner approves C&NW-C&GW merger bid

The Chicago & North Western, 10,417 miles long, has been proposing merger with the Chicago & Great Western, 1,458 miles long, to create an 11,875-mile operating system in 11 Midwestern states. Now, an ICC Examiner has given his approval to the plan, finding it "a step forward in advancing the regulatory scheme in providing the nation with safe, economic and efficient transportation, and is consistent with the public interest." The merger would save the roads an estimated $5.9 million annually. The plan must now get full ICC approval.

MONDAY MORNING REPORT

Urban transportation and 'maximum effort'

Just about everybody would like to be optimistic about the solution of urban mass-transportation problems. But the men closest to these problems know well that straightening out the urban-transport chaos of today (and avoiding even greater chaos tomorrow) will take a degree of effort perhaps never before seen in the development of land-based systems. Many of these experts got together recently at the University of Chicago for a three-day conference on mass transportation—and their conclusions show clearly that (a) there are no set answers for the overall questions, and (b) there's not really a consensus as to the specific approaches that should be taken.

The experts confer—on a broad scale

The conference, one of a series sponsored by the Brotherhood of Railroad Trainmen, was a broad-gauge affair. Workshop groups included representatives of four major supply companies; top passenger-traffic officers of three railroads; urban planners and transportation system operators from such metropolitan areas as New York, Boston, Philadelphia, Chicago and Los Angeles; transportation-oriented academicians from several universities; a sprinkling of transport consultants; and several government officials, including Dr. Robert A. Nelson, director of the office of High Speed Ground Transportation in the Commerce Department. BRT people, headed by President Charles Luna, were on hand—but as coordinators, not particularly as participants.

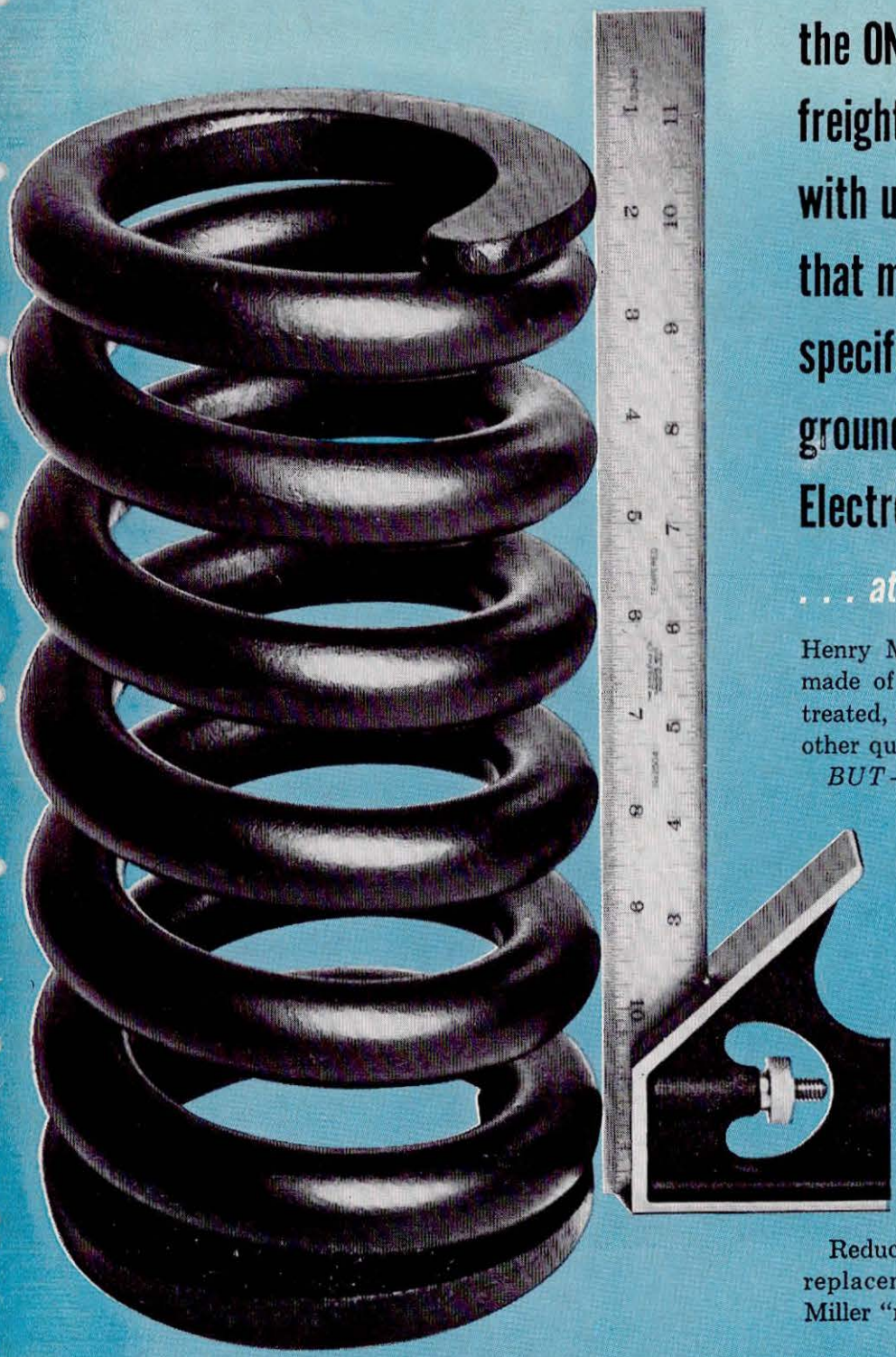
'We should throw it all away—but we can't'

Conferees attacked the problem on three fronts—the achievement of "balance" in mass transportation; the role of government at various levels; and the need for integrating transportation with long-range urban planning. In almost every case, it was a matter of adjusting the desirable to fit the possible. As one planner noted, "maybe we should throw away everything in the past—because our experience has all been so bad. But of course we can't. We have to live with inherited institutions."

Full agreement: It's hard to obtain

Chances are the conference itself didn't produce many "new" ideas. But it did bring a number of ideas together and let them work on each other—under circumstances designed to permit free and full play in discussion. If future conferences follow the same general theme—and it's indicated that they may—then perhaps new approaches may evolve out of the steadily building file of information which will be available. One thing, however, seems certain: A true consensus will be extremely hard to reach. This may be due in part to the difficulty in establishing common definitions of problems and solutions for specific areas. But it may also develop from the experts' inability to hit common ground even on the broad generalities. One example, from the BRT conference: Some participants blamed the sad state of urban transportation on failure by management and labor interests to adapt to changing conditions. But some put the blame on the public for putting all its trust in the automobile and refusing to patronize good public transportation service, where it exists. And, finally, some of the experts defended the public and rapped the knuckles of the planners, with the observation that "the public is more willing to accept advanced planning than the professional, who seems inclined or committed to pedestrian solutions."

HENRY MILLER *rite-Angle* SPRINGS



the ONLY standard freight car springs with unground ends that meet A.A.R. specifications for ground end tolerances— Electronically load tested

. . . at No Extra Cost!

Henry Miller "rite-Angle" springs are made of the same quality steels, heat treated, shot peened and load tested as other quality truck springs.

BUT—Henry Miller "rite-Angle" springs—with parallel ends—not only give better service and longer life than any truck springs *without* ground ends, they will match any *with* ground ends—at no extra cost!

Every spring is electronically load tested—the outer coils to standard 5500 lbs. and the inner coils to standard 2200 lbs. Automatically calibrated to A.A.R. specifications.

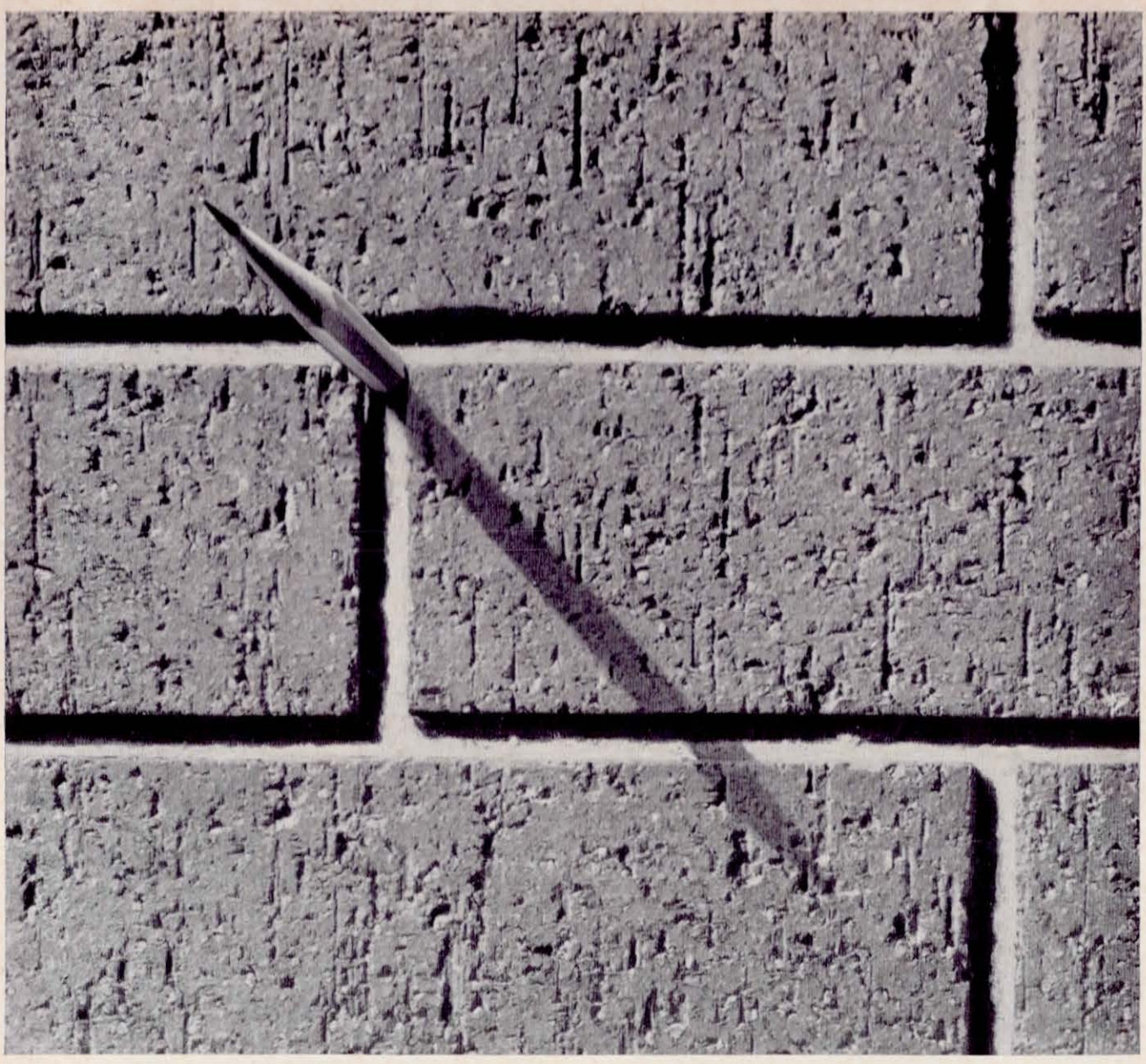
Reduce your spring maintenance and replacement costs—specify Henry Miller "rite-Angle" Springs.

HENRY MILLER

SPRING AND MANUFACTURING COMPANY

DAVIDSON STREET • SHARPSBURG • PITTSBURGH, PA. 15215 • PHONE 412/782-0700

GEARED TO PROGRESS P R I MEMBER



An idea can go through anything

Here's a close-up of our new $5,000,000 facility called Timken Research.

We expect great ideas to come out of this building.

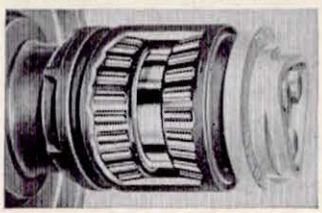
It's located outside Canton, Ohio, about 5 miles from our headquarters and main plant.

Timken Research will be the largest research and development center in the bearing industry. Here we'll be able to match up tough problems and inquisitive people.

Pure research will flourish here, cloistered, nourished and encouraged. Our engineers and metallurgists will work on product development and equipment development. They will have one aim: to produce Timken® bearings, Timken steel and Timken rock bits that will deliver even longer life at lower cost in more applications.

The Timken Roller Bearing Company, Canton, Ohio. Manufacturers of Tapered Roller Bearings, Fine Alloy Steel and Removable Rock Bits.

QUALITY TURNS ON HEAVY DUTY



TIMKEN®
TAPERED ROLLER
BEARINGS

Circle 28 on reader service card

WEEK AT A GLANCE

Railroads battle back against the plains' 'worst storm'

Some called it the worst storm in history, the blizzard that lashed the northern plains in early March. Snow drifts 20 to 30 feet deep weren't uncommon. Highway travel was at a complete standstill; air travel was hampered; and, as one railroad man put it, "we had one crisis on top of another." The snow itself was a major problem—but the wind was even worse. Even after the snowfall stopped, winds continued to pile up deep drifts—and the winds compacted the snow to the point where plow crews thought they were trying to go through concrete. Great Northern told a story common to all roads in the North Dakota area: "By 8 o'clock Thursday night (March 3), visibility was zero all the way from Minot into western Minnesota. At 6:25 o'clock Friday morning, we made the decision to stop all traffic—except the eastbound 'Empire Builder,' which we did bring in from Minot. Blizzard conditions continued through Saturday, but because we'd made the decision to stop traffic, we didn't have any passenger trains caught out on the line in drifts."

. . . but progress seemed to be measured in inches

For GN, Northern Pacific, Soo Line, Milwaukee Road and the Canadian lines, there was bad trouble. Soo, for instance, had two freight trains lost in the storm. GN brought in rotary plows from mountain territory to battle the drifts. But one of the road's main lines was closed and remained so. The second line through Dakota was opened for traffic Sunday, March 6, but high winds caused more drifting, and on Monday, March 7, a freight train was trapped west of Grand Forks, N.D., and the line was plugged again for a short time. All available snow-fighting equipment was thrown into the area. But men were no match for weather. By Weather Bureau estimates, "human exposure survival times were figured at 15 to 20 minutes at the height of the storm. (And on March 7, GN had another emergency. The "Empire Builder" and the "Western Star" collided in Montana, killing both engineers and injuring a number of crewmen and passengers. Among the uninjured: President John M. Budd and Vice President-Operating J. L. Robson, whose business cars were attached to the "Empire Builder." Locomotive units were heavily damaged, but passenger cars remained upright, aligned with the rails and coupled, and GN had the line back in service quickly.) Through the rest of last week, supervisors and work crews in Dakota labored to get snowbound lines opened—though a number of branch lines in the area would probably stay blocked for days. GN, for one, was preparing to make aerial surveys of its branch routes, to plan snow removal.

A call for action on the car shortage

When it's harvest time in the West, moving the grain requires an awesome number of cars to do the job. Annual shortages of cars in these regions are something the railroads have tried to live with for years. But now the problem is growing more acute. Last week, Northern Pacific President Robert S. Macfarlane said the shortage of cars has become a major problem and "it is time we adopt drastic remedies at whatever cost and find a solution that will enable us to supply cars for loading for those who want to do business with us." In five months last year, NP says it alone lost $1.5 in revenue due to car shortages. Macfarlane wants an equalized car acquisition program based on the basic tenet that all roads should have enough of their own cars to handle the traffic on their own lines. He said this should apply equally to all lines—transcontinental, bridge and terminating—because "all share in the division of revenues and all should share in the responsibility for providing the necessary freight cars for the haul from origin to destination." Macfarlane thinks a "realistic" per diem rate, which would include a profit incentive, based on the cost of cars, would be a stimulant to car acquisition. "But we must have action soon on whatever plan is adopted."

Weak railroads—a drag on the economy

When the numerous Eastern railroad merger entanglements are finally resolved what is expected to emerge from the consolidations are two giant rail systems—the Pennsylvania-New York Central and the Norfolk & Western-Chesapeake & Ohio. Last week, N&W Senior Vice President John P. Fishwick gave some reasons why he believes that eventually there will be less than a dozen major railroad systems in the U.S. "The nation cannot afford to have an inadequate or financially weak railroad industry as a drag on the economy. And shippers must realize that only through mergers now can railroads supply the equipment and facilities for future transportation requirements." Predicting consummation of the two large mergers, he said they would "contribute to a dynamic railroad industry which the nation needs," bringing simplified tariffs and routing and financial ability to provide large-scale computerization and other technological improvements that the future will demand.

Looking ahead to 1975, Fishwick said the expected growth of the Gross National Product of 41 to 55% by then would bring a similar gain in intercity freight volume. Railroads should expect stiff competition from vastly improved quality of transport by other modes in the next ten years, and a major breakthrough in operating efficiency by the railroads will be needed.

GUS WELTY'S LINES ON LABOR

WELTY

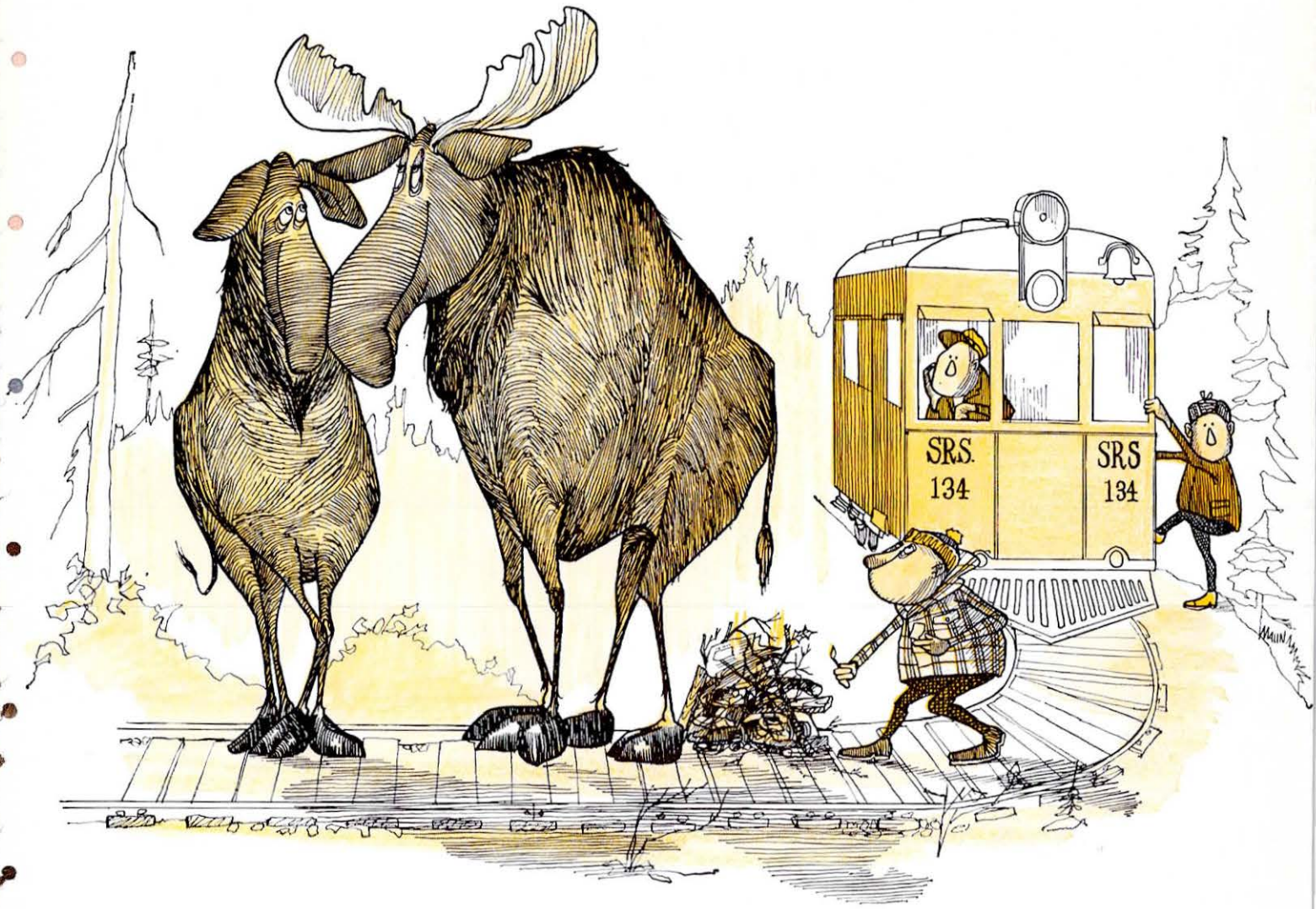
THE OPERATING BROTHERHOODS are on the brink of another defeat in their efforts to wipe away the effects of the fireman-off and crew-consist arbitration awards. But the way in which they've been shoved to the brink seems to have left them more puzzled than alarmed, for the time being, at least. It all started with the filing of an action directed against the train-service organizations. But the opinion which the judge has entered also covers the firemen's situation. And that's where the puzzlement has developed. Train-service people say they don't understand the inclusion of the fireman issue; and the Brotherhood of Locomtive Firemen & Enginemen says it doesn't regard itself as bound by the judge's opinion in a case where the union wasn't actually party to the litigation.

JUDGE ALEXANDER HOLTZOFF of U.S. District Court in Washington issued the opinon (and indicated that his conclusion would be embodied in a final judgment to be entered after trial of the action). Essentially, the opinion represents a rather complete setback for the brotherhoods on a key point in their fight against continuation of manning practices established via the arbitration route.

THE UNIONS HAVE ARGUED that when the awards of Arbitration Board 282 expire, the carriers must re-establish conditions in existence before arbitration. The essence of the argument seems to be a twist on the Cinderella story—to the effect that the railroads (like Cinderella) have had their time of triumph, but when the clock strikes midnight Cinderella's coach turns back into a pumpkin and the railroads have to re-establish all the fireman and train-service jobs blanked under the arbitration awards.

THE CARRIERS don't see it this way—and neither does Judge Holtzoff. The interpretation urged by the unions, he said, "is unreasonable and would defeat the very purpose of the legislation and of the award." As the judge sees it, "the steps taken under the award have resulted in the creation of a new status. . . . The award of the compulsory arbitration . . . must be regarded as taking the place of an agreement within the meaning of the Railway Labor Act." This, of course, means that change can be made only through established procedures of the Act: Neither side "may take any unilateral action or resort to self-help."

IF THE ORDER follows the line of the opinion, an appeal by the train-service unions can be expected. But the Firemen have a problem that's a bit more complicated. Clearly, their situation was considered by Judge Holtzoff—but at the same time that the union is trying to get an opposite opinion from another judge, in U.S. District Court in Chicago.



some schedules are wild . . . but we "fry" our best to meet them

When planning your track maintenance schedules, let Sperry Rail Service show you where the real track testing economies are. Maximum testing from each dollar spent is assured when Sperry Rail does the scheduling. Planning means thoroughness . . . every location can be scheduled for testing in accordance with its needs. Signing with Sperry means less rerouting of traffic . . . only Sperry tests the whole rail at one time, to clear your right-of-way up to twice as fast as other services . . . Let a Sperry expert plan your testing program . . . Get on the schedule now!

SPERRY RAIL SERVICE

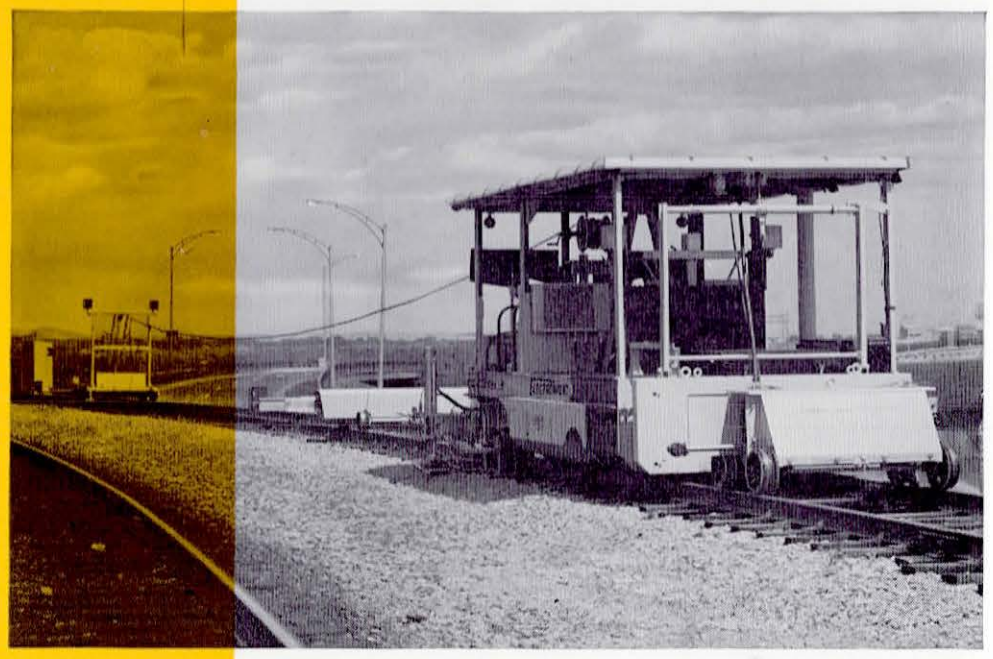
A DIVISION OF AUTOMATION INDUSTRIES, INC.

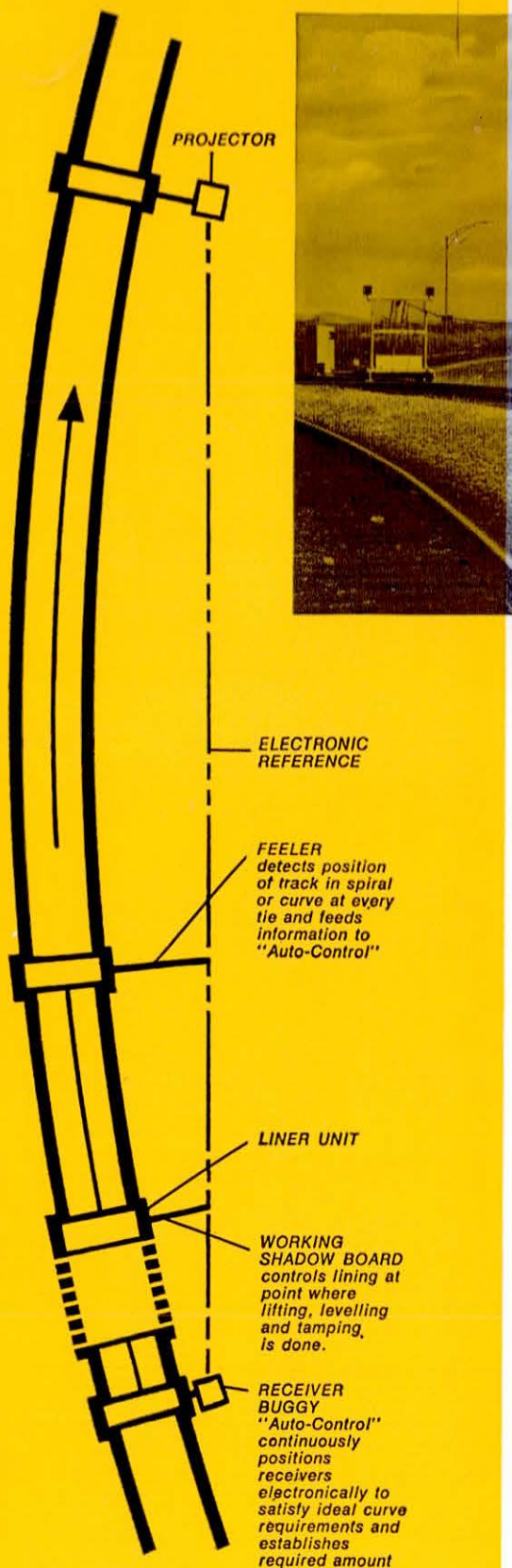
General Offices • Danbury, Connecticut 06813

Circle 6 on reader service card

Circle 7 on reader service card ►

LEVELLING, LINING, TAMPING... in ONE OPERATION, with ONE OPERATOR




PROJECTOR
ELECTRONIC REFERENCE
FEELER detects position of track in spiral or curve at every tie and feeds information to "Auto-Control"
LINER UNIT
WORKING SHADOW BOARD controls lining at point where lifting, levelling and tamping is done.
RECEIVER BUGGY "Auto-Control" continuously positions receivers electronically to satisfy ideal curve requirements and establishes required amount of track correction.

The Autojack Electromatic with Autoliner leads the way through these advantages:

- Gives the highest possible degree of accuracy by electronic beams projected 100 feet in advance of where levelling, lining and tamping are taking place.
- Automatic, continuous operation for both tangent and curve track.*
- No plotting of spirals or curves required. Machine computes as it runs for the best transition.
- No disturbing or humping of track — lining takes place simultaneously with lifting and tamping ahead of tamping tools.
- With the Autoliner, it is possible to make a minute throw and have it stay there because tamping is done in correct alignment.

*Model ALT for Tangent track and Model ALC for Tangent and Curve Track, both available as attachments for existing AUTOJACK ELECTROMATICS.

TAMPER INC.
53 Court St., Plattsburgh, N.Y.

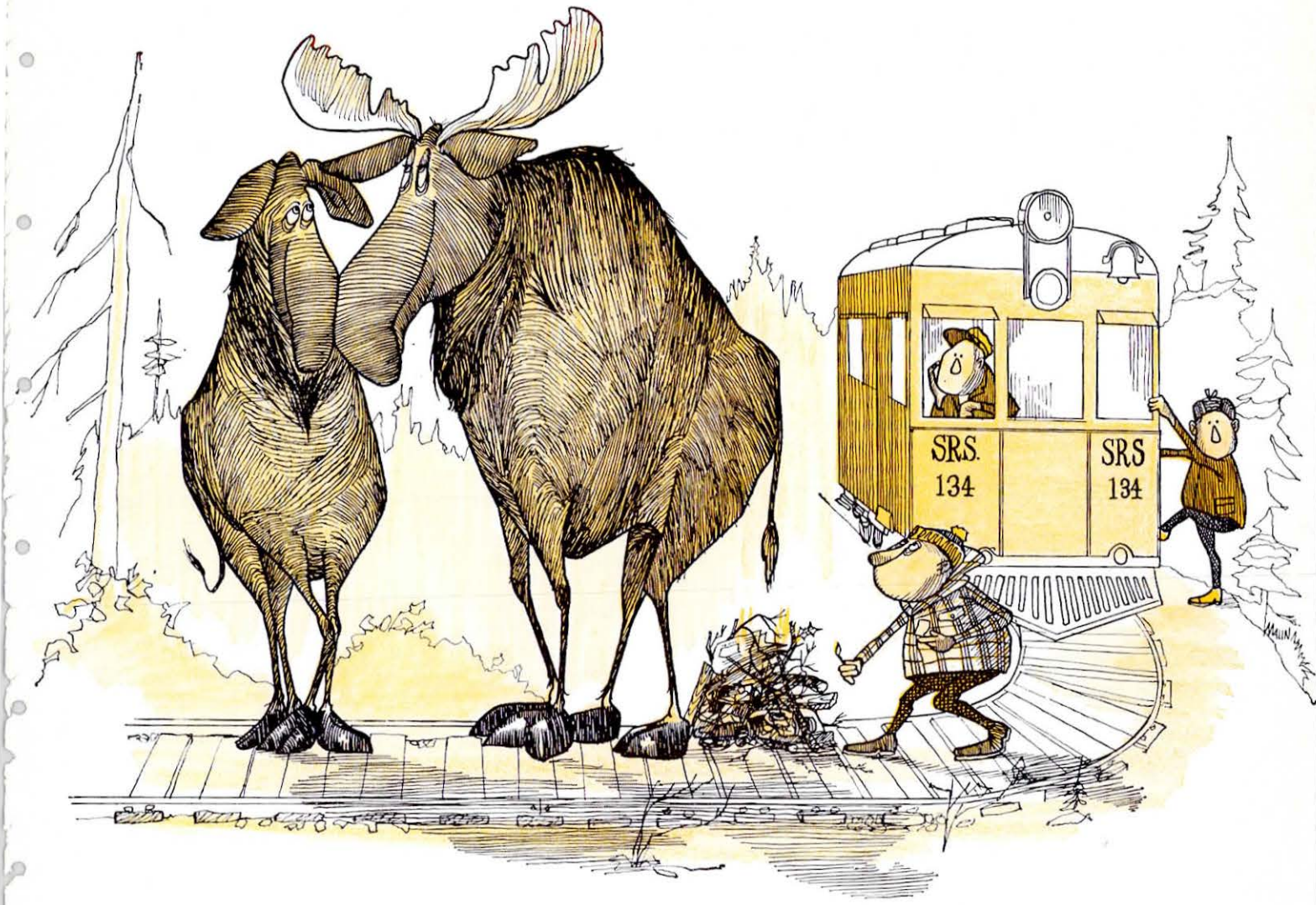
Sales & Service:
2147 University Avenue,
St. Paul 14, Minnesota
Phone: 645-5055

In Canada: 160 St. Joseph Blvd.,
Lachine, Quebec.
Phone: 637-5531

Information on the Autoliner and Autojack Electromatic—or other track maintenance machines, is available on request.

Tamper

Circle 8 on reader service card



some schedules are wild . . . but we "fry" our best to meet them

When planning your track maintenance schedules, let Sperry Rail Service show you where the real track testing economies are. Maximum testing from each dollar spent is assured when Sperry Rail does the scheduling. Planning means thoroughness . . . every location can be scheduled for testing in accordance with its needs. Signing with Sperry means less rerouting of traffic . . . only Sperry tests the whole rail at one time, to clear your right-of-way up to twice as fast as other services . . . Let a Sperry expert plan your testing program . . . Get on the schedule now!

SPERRY RAIL SERVICE

A DIVISION OF AUTOMATION INDUSTRIES, INC.

General Offices • Danbury, Connecticut 06813

Circle 6 on reader service card

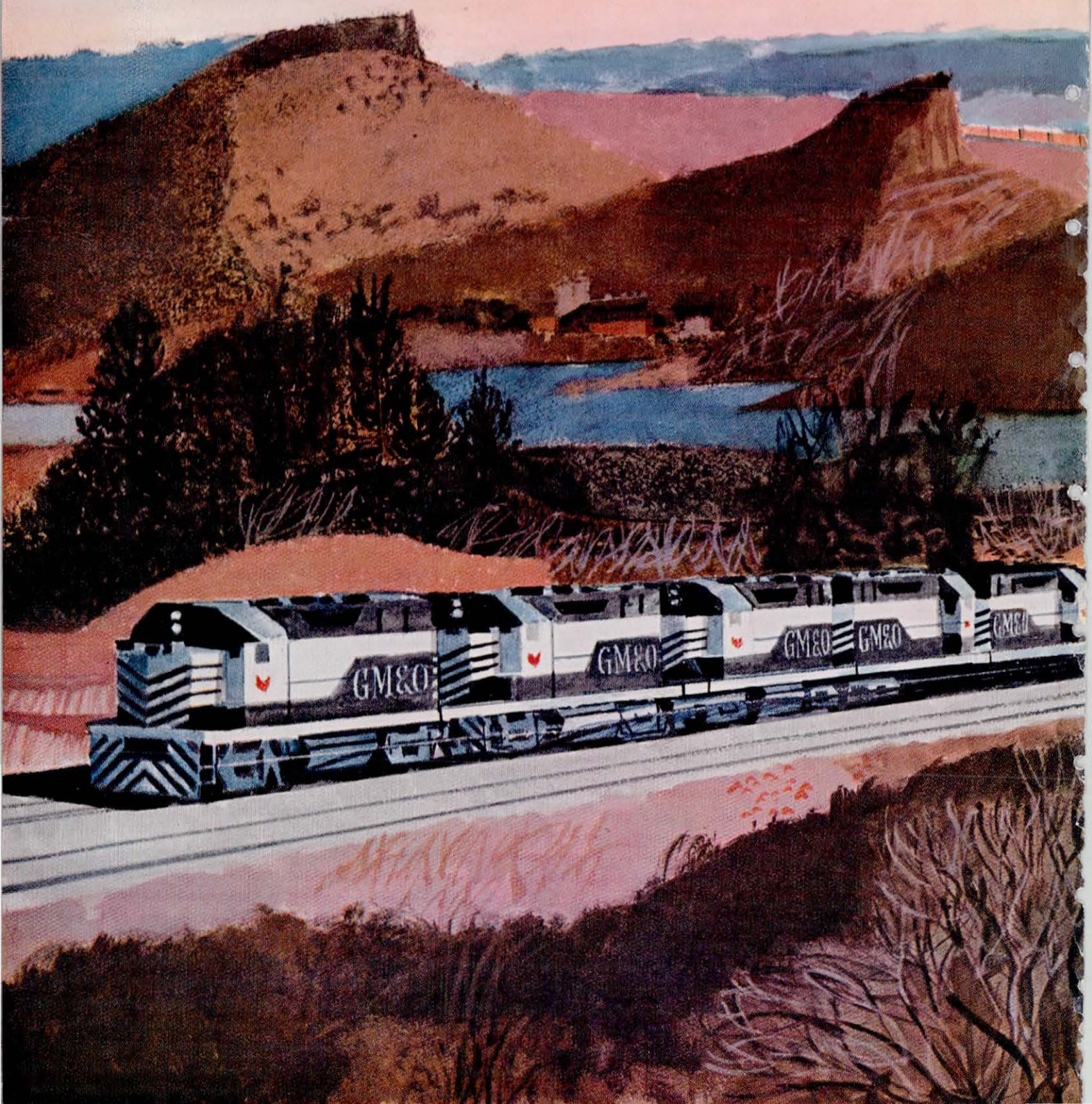
Circle 7 on reader service card ►

GM & O's new milestones in unit train progress:

The contract: Deliver a record 12,600 tons of coal daily over a 307-mile route for the next ten years. To fulfill it, the Gulf, Mobile and Ohio inaugurated several advances in railroading.

The 270 utility-owned gondolas, for example, are contoured for easy rotary dumping and were, when built, the lightest 100-ton gondolas of their type in existence.

Twelve new diesels shuttle two 126-car trains between Percy and Joliet, Illinois. Trip



time is 19 hours loaded, 14 hours empty.

At Joliet, the rotary-coupled cars are pulled by a robot locomotive and automatically dumped. One man controls this operation with the aid of closed circuit television and a computer. Loading and unloading time is only 2 minutes per car.

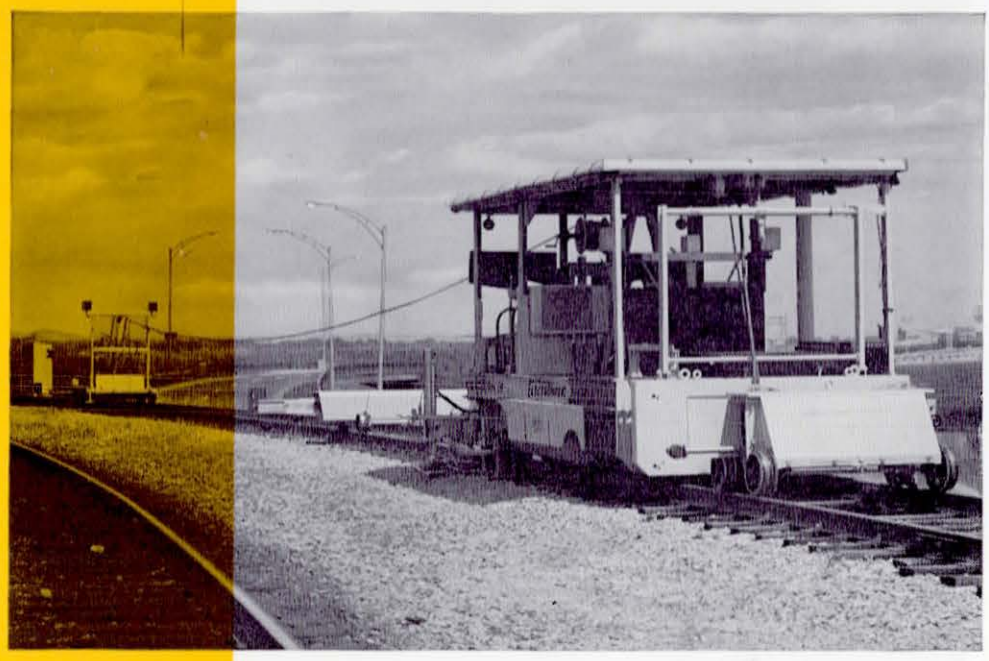
Because of these and many other innovations, GM&O has given its trains a distinctive name: Mass-ter Movement Trains. In the careful planning that will save the customer about $4 million per year in freight costs, GM&O overlooked no detail.

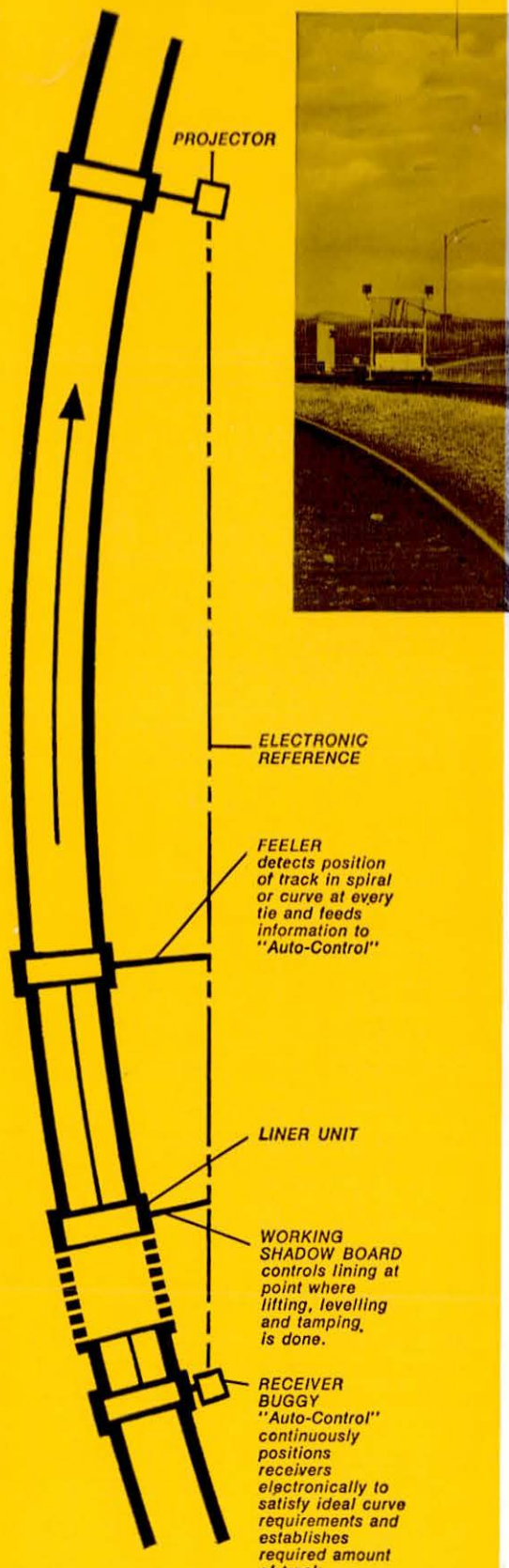
To lubricate the locomotives it uses new AMERICAN® WR 6400 H. D. Diesel Oil. Advantages include an exclusive ashless detergent to reduce engine deposits and a high alkaline reserve for longer protection against combustion acids.

You expect more from American and you get it!* American Oil Company, 910 South Michigan Avenue, Chicago, Illinois 60680.

*Trademark

LEVELLING, LINING, TAMPING... in ONE OPERATION, with ONE OPERATOR




PROJECTOR
ELECTRONIC REFERENCE
FEELER detects position of track in spiral or curve at every tie and feeds information to "Auto-Control"
LINER UNIT
WORKING SHADOW BOARD controls lining at point where lifting, levelling and tamping, is done.
RECEIVER BUGGY "Auto-Control" continuously positions receivers electronically to satisfy ideal curve requirements and establishes required amount of track correction.

The Autojack Electromatic with Autoliner leads the way through these advantages:

- Gives the highest possible degree of accuracy by electronic beams projected 100 feet in advance of where levelling, lining and tamping are taking place.
- Automatic, continuous operation for both tangent and curve track.*
- No plotting of spirals or curves required. Machine computes as it runs for the best transition.
- No disturbing or humping of track — lining takes place simultaneously with lifting and tamping ahead of tamping tools.
- With the Autoliner, it is possible to make a minute throw and have it stay there because tamping is done in correct alignment.

*Model ALT for Tangent track and Model ALC for Tangent and Curve Track, both available as attachments for existing AUTOJACK ELECTROMATICS.

TAMPER INC.
53 Court St., Plattsburgh, N.Y.

Sales & Service:
2147 University Avenue,
St. Paul 14, Minnesota
Phone: 645-5055

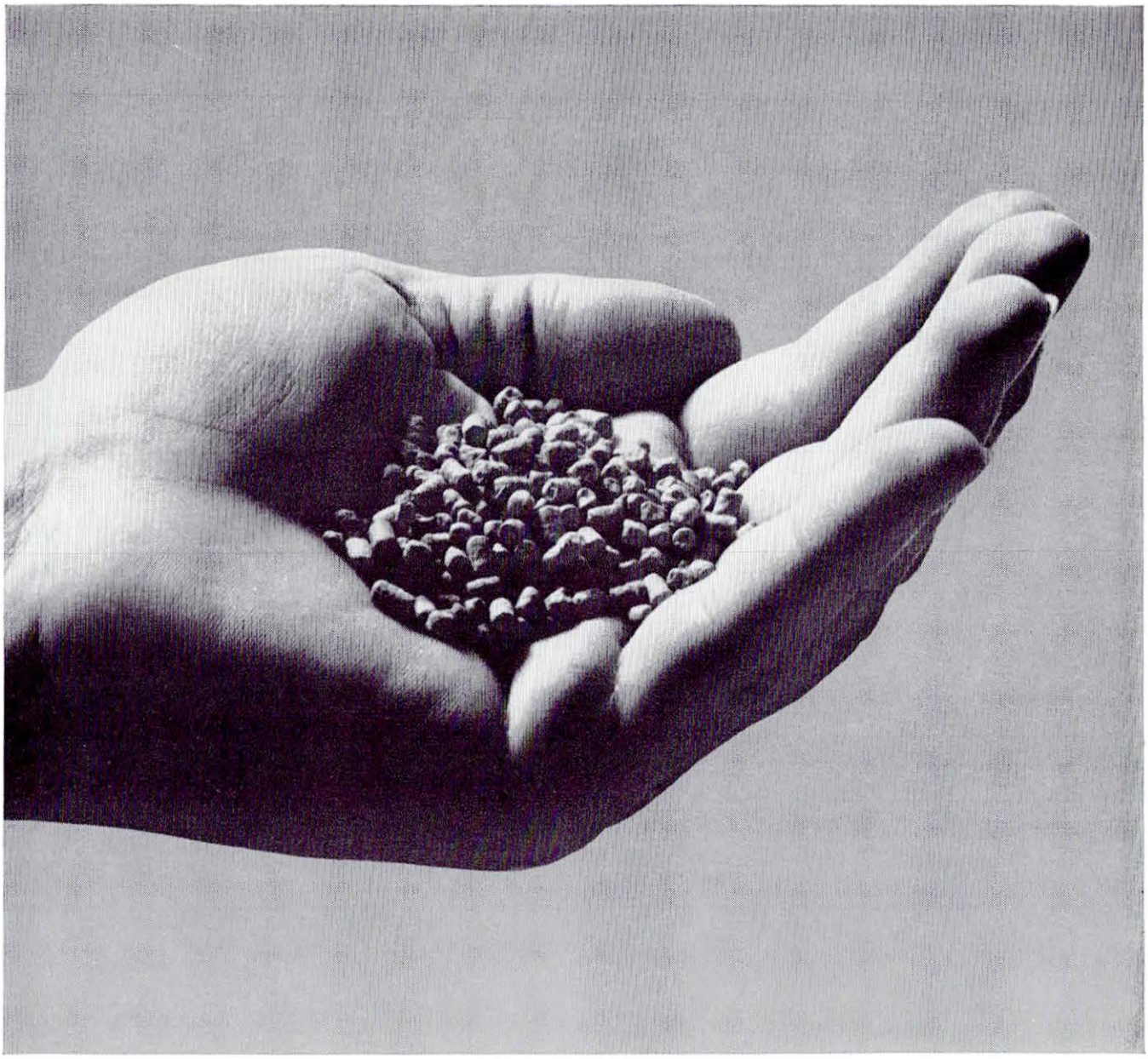
In Canada: 160 St. Joseph Blvd.,
Lachine, Quebec.
Phone: 637-5531

Information on the Autoliner and Autojack Electromatic—or other track maintenance machines, is available on request.

Tamper

Circle 8 on reader service card

If you put this much Tordon 10K on 30 square feet of brush, you'll have 30 square feet of grass before long.



Just 2 tablespoonsful of TORDON® 10K Pellets herbicide will put down 30 square feet of brush once and for all, give grass a chance to move in.

But that's just one example of what this brush killer can do. What happens when you use TORDON 10K Pellets on a larger scale—along right-of-ways for spot treatment? The same thing. Tough woody plants like conifers, maple, locust, sassafras and others drop in their tracks. And with a minimum of time and effort by your crews.

Toss TORDON 10K Pellets by hand or use a granular spreader to apply any time in the spring or early summer during vigorous growth. Leaves and roots absorb this potent herbicide so completely that one application usually gives lasting control.

In addition, Dow makes other herbicides for use with spray equipment. Check your Dow distributor for VEON® Brush Killer herbicide, RADAPON® grass killer, ESTERON® Brush Killer herbicide, and the rest. He'll know which ones are right for you. We're experts in planning herbicide programs to fit specific needs. The Dow Chemical Company, Agricultural & Industrial Bioproducts Sales, Midland, Michigan.

DOW

Circle 9 on reader service card

Circle 10 on reader service card ►

10,000,000 BUSHELS OF WHEAT WITH AN URGENT DEADLINE TO MEET

Only the railroads can do such a BIG job so dependably and economically.

MOVING HUGE TONNAGES of grain and other essential materials on deadline schedules is an everyday miracle of American railroads and the men who direct them.

Only steel wheels can move so much, so quickly, and so economically. America moves ahead, lives and prospers on its rails.

Helping the wheels turn swiftly and surely is MAGNUS, a name known and respected for its service to railroading. For more than 80 years, MAGNUS has served railroads with the finest in bearings, journal box components and diesel parts—products of unsurpassed reliability with longest bearing life and lowest cost operation.

With its long-range research and development program, MAGNUS will continue to provide products that make the railroad's job easier, more reliable, economical and efficient. Eight strategically located and newly modernized plants will continue to serve the railroads of America as they advance into their dynamic future.

RAILROADS DEPEND ON

MAGNUS

MAGNUS METAL CORPORATION
Subsidiary of National Lead Company

111 Broadway, New York, N.Y. 10006
80 E. Jackson Blvd., Chicago, Ill. 60604

AREA plans busy meeting

Signs of the times will be plentiful at the March 14-16 annual meeting of the American Railway Engineering Association in Chicago's Sherman House. They will be there in the form of addresses and other special features dealing with the engineering problems produced by the forward march of the railroad industry. They will be there, too, in the form of the many reports of standing committees on current technical problems to be presented during the 2½-day meeting.

● **Manion is keynoter.** The assignment for setting the tone of the meeting was given to R. R. Manion, vice president of the AAR's Operations and Maintenance Department. His keynote address, "Toward New Dimensions in Railroading," will highlight the opening session of the meeting on Monday morning, March 14.

Organized social activities during the meeting will be confined to the annual luncheon, scheduled for Tuesday noon.

● **Three honorary memberships.** Also during the luncheon, certificates of honorary membership will be presented to three past presidents of the AREA—Wm. J. Hedley, assistant vice president, Norfolk & Western; George M. O'Rourke, retired assistant engineer maintenance of way, Illinois Central; and C. J. Code, retired assistant chief engineer, Pennsylvania.

Even though the organized social activities are confined to the luncheon an opportunity for socializing will be afforded at a breakfast bar sponsored by Railway Age and Railway Track and Structures. Each morning of the meeting beginning at 8:00 o'clock fruit juice, rolls and coffee will be served in Parlor 0 on the mezzanine level of the Sherman House adjacent to the registration facilities.

This is an off-year for the AREA so far as an accompanying exhibit of manufacturers' products is concerned. Last year, when the meeting was held at McCormick Place, Chicago, there was an exhibit sponsored by the National Railway Appliance Association (since merged with the Association of Railway Track and Structure Suppliers to form the Railway Engineering-Maintenance Suppliers Association).

MONDAY MORNING

MARCH 14, 9:30 to 12:00—Grand Ballroom

Presidential Address—A. V. Johnston
Report of Executive Secretary Earl W. Hodgkins and Treasurer A. B. Hillman
Greetings from the Railway Engineering-Maintenance Suppliers Association —J. L. Bevin, president

Keynote Address—"Toward new dimensions in railroading," by R. R. Manion, vice president, Operations & Maintenance Department, AAR

Address — "Much railroading is civil engineering," by W.J. Hedley, president, American Society of Civil Engineers, past president AREA and assistant vice president, N&W

Reports of Committees
- Clearances
- Contract Forms
- Electricity

MONDAY AFTERNOON

1:30 to 5:00—Grand Ballroom

Reports of Committees
- Yards and Terminals

Address—"America's first rail-to-ground-to-ship coal terminal" (illustrated), by James Timpson, vice president, Soros Associates

- Highways
- Engineering and Valuation Records
- Waterways and Harbors

Motion picture on the "St. Lawrence Seaway—Small world of industry and agriculture," with introductory remarks by F. J. Olsen, assistant engineer, Illinois Central
- Economics of Railway Location and Operation
- Economics of Railway Labor

Address—"Current status of prestressed concrete ties on railroads in the United States" (illustrated), by G. M. Magee, director of engineering research, AAR

TUESDAY MORNING

9:00 to 11:40—Louis XVI Room

Reports of Committees
- Maintenance of Way Work Equip.

Address—"The importance of hydraulics as applied to railway maintenance equipment" (illustrated), by John Pippenger, general sales manager, Racine Hydraulics Division, Racine Hydraulics & Machinery, Inc.

- Masonry
- Impact and Bridge Stresses
- Cooperative Relations with Universities

Address — "Educational and research aspects of the Northeast Corridor Study" (illustrated), by Dr. W. W. Seifert, associate dean of engineering, MIT

ASSOCIATION LUNCHEON

Grand Ballroom—12:00 noon

Tuesday

Address—"Corporate planning—A modern must," by S. F. Dingle, system vice president, CN

TUESDAY AFTERNOON

2:15 to 5:00—Louis XVI Room

Reports of Committees
- Water, Oil and Sanitation Services
- Wood Bridges and Trestles

Address—"Timber bridge inspections — Are they adequate?", by J. W. Storer, vice president, Osmose Wood Preserving Co.

- Iron and Steel Structures
- Buildings

Panel Discussion—"Piggyback—Its development and its future." Panel members: C. R. Madely, supervsg. engr., Southern Pacific (moderator); E. O. Walters, past pres., National Railroad Piggyback Assn., and asst. to gen mgr., Kansas City Southern; J. H. Hildenbiddle, dir. of ind. engrg., New York Central System; J. N. Sherbourne, asst. supt.-trailer and flat-car serv., Southern Pacific; E. B. Wilson, supt. stations, Chicago & North Western; R. B. Short, supt. sta. & trans., Norfolk & Western; and K. G. Heimbach, dir. truck & TOFC sls., Great Northern.

WEDNESDAY MORNING

9:00 to 12:30—Grand Ballroom

Reports of Committees
- Rail
- Ties and Wood Preservation

Address—"The distinctive properties of coal-tar creosote with special reference to protection of wood from decay and weathering" (illustrated), by Dr. J. N. Roche, consultant, Tar & Chemical Division, Koppers Co.

- Track
- Continuous Welded Rail
- Roadway and Ballast

Address — "An application of thermonuclear excavation to railroad use" (illustrated), by R. H. Beeder, chief engineer, Santa Fe

PROGRESS REPORT
PROGRESS REPORT
PROGRESS REPORT
PROGRESS REPORT

What AAR's Research Center has been doing

A report for the busy railroader on significant findings of the past year, including the following:

- **Effect of increasing wheel loads on rail-failure rates.**
- **Cause of rail failures at bootleg connections.**
- **Action of Hy-Cube cars with varying track conditions.**
- **Effect on track of a TTX car coupled to a short car.**
- **Preventing derailments of 100-ton hopper cars.**
- **More effective means of detecting hotboxes.**
- **New facts about shear failures in timber stringers.**
- **Accuracy of weighing cars in motion, coupled and uncoupled.**

BY G. M. MAGEE*

The results of activities carried on by the AAR Research Center are published in the AREA Proceedings and in individual Research Center reports. However it occurred to me that because of all the paper work coming across the desks of busy railway officers, it might be helpful to railroad engineers to have some of the most interesting and significant research findings and developments digested for quick review. Accordingly, in this article I have attempted to do this for the findings that I consider to be within that category.

● **Trends in rail failures.** This year for the first time we have included in the rail-failure statistics prepared for the AREA rail committee, a tabulation of all rail failures, service and detected, occurring in main track by rail section. The purpose is to determine whether an increase in the number of failures is resulting from the increasing number of freight cars with heavier wheel loadings. A tabulation (p. 21) gives results for three years.

For 1964, the values in the table represent 126,397 failures in 195,283 track-miles. Because of the relatively large increase in failures in 1964 compared with 1963, the results for 1965 are awaited with interest.

● **Wheel loads and rail failures.** The ratio of wheel load to wheel diameter is considered significant with respect to the development of progressive-type fractures in the rail head, which are thought to be influenced by the intensity of bearing pressure of the wheel on the rail. These include transverse fissures, detail fractures from head checks and shelling, horizontal and vertical split heads, engine-burn fractures, and other head failures. An effort has been made by the AAR Joint Committee on Relation between Track and Equipment to maintain this ratio at about 800 lb per inch of wheel diameter. With the 100-ton car and 36-inch-diameter wheels, the ratio is 913.

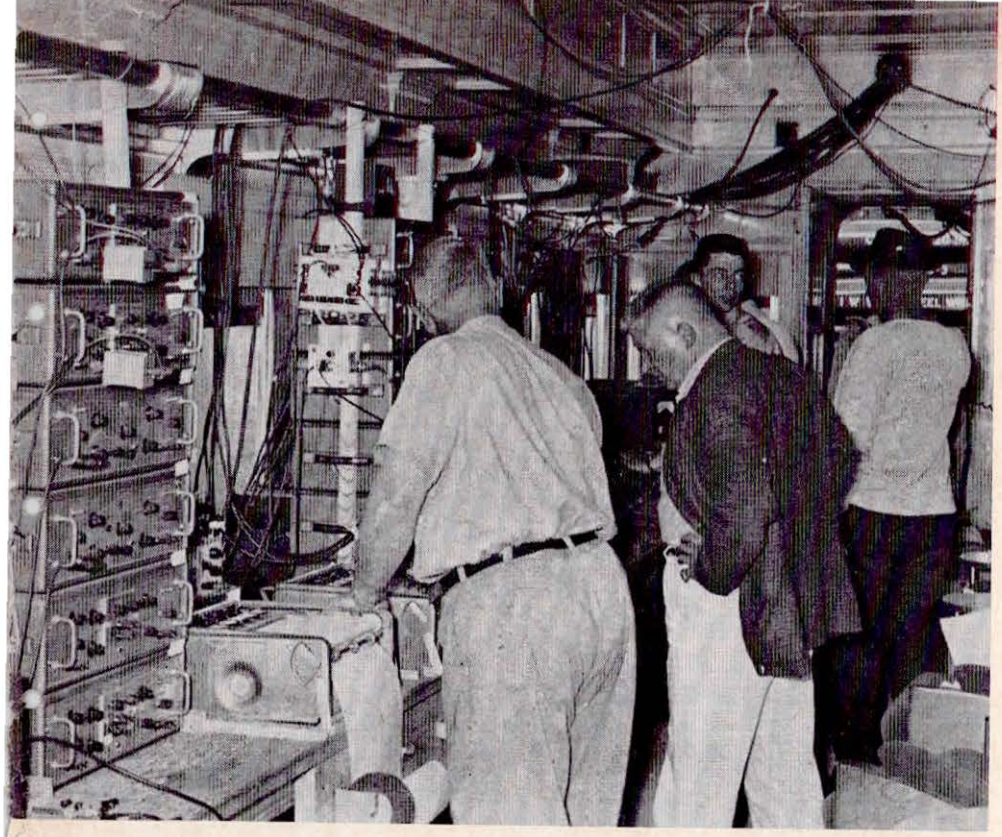
Rolling-load tests made at the Research Center have indicated that approximately 5,000 lb more wheel load can be carried on a 38-inch-diameter wheel than on a 33-inch-diameter wheel without the likelihood of shelling. This is based on an accelerated laboratory test which does not exactly simulate service conditions.

The only data available from service experience are those of the Bessemer & Lake Erie with loaded ore cars carrying about 1,000 lb per inch of diameter and the Quebec North Shore & Labrador with loaded ore cars carrying 870 lb per inch of diameter. For rail in main track, the total head failures per 100 track-miles to Dec. 31, 1964, were 16.8 for the QNS&L, 4.8 for the B&LE, and 25.2 for all reporting roads for rail sections over 100 lb per yard. It is, of course, difficult to make a comparison on this basis because of differences in traffic density, amount of curvature, age and size of rail, and train speed.

● **Butt-weld failures.** For several years after continuous-welded rail was first used, the AREA Committee on Rail reported the number of butt-weld failures by type of weld. That was discontinued in 1950.

This year the Research Center pre-

*Director of Engineering Research, Association of American Railroads



AAR mobile test laboratory, showing instrumentation for recording coupler force and angle, roll action, track cross level, and vertical and lateral loading on truck frames during Hy-Cube car investigation.

pared a report of accumulated butt-weld failures by types of welds in new and relay rail for the AREA Committee on Continuous Welded Rail. The report shows that the failure rate is quite low for the electric-flash and oxyacetylene pressure welds in new rail, about one failure per year in 16,700 welds. The rate is higher for the thermite welds in new rail, about one failure per year in 370 welds. The failure rate is higher for all types of welds in relay rail as compared with new rail.

● **Bootleg rail bonds tested.** A member road reported three service rail failures, each of which had developed between two bootleg connections that had been thermite-welded to the field side of the rail head about two inches apart for making the electrical connection of the rail into the signal circuit. Detailed examination of the fractured surfaces showed that a progressive fracture had originated from the heat-affected metal of one thermite weld. The failure patterns of all three were identical.

Bonds were welded on four rail specimens in a similar manner for rolling-load tests. In these tests a progressive fracture developed from the weld area, and complete fracture occurred from 609,100 to 1,530,900 cycles, whereas 2,000,000 cycles is considered a runout. Similar tests made on two rail specimens with drive-in-type bonds in the rail web near the neutral axis both ran out the 2,000,000 cycles without failure. It is planned to make similar tests with the thermite-weld bonds placed near the neutral axis and also in the lower field fillet.

It should be noted that these service failures occurred where the thermite-weld bonds were far enough away from the rail ends for the rail to be subjected to the full range of flexural stresses from passing wheel loads.

Thermite-welded rail bonds have been used extensively for many years for bridging across rail ends at rail joints without developing rail failures. It is important to recognize that these bonds are welded to the side of the rail head near the rail end where the flexural stresses are practically zero.

● **Findings with Hy-Cube cars.** As part of an extensive investigation of Hy-Cube cars, conducted for a number of roads owning these cars, data were obtained of interest to those concerned with maintenance of track and structures. The following were indicated from the test results:

—Hy-Cube cars connected to a 41-foot gondola car can be operated from tangent around a 20-degree curve; Hy-Cube cars connected together can be operated around a 30-degree curve.

—A Hy-Cube car with a 41-foot gondola at each end can be operated around a 10-degree 30-minute curve with a drawbar pull up to 230,000 lb without the wheels lifting off the high rail.

—Roll-resonance tests in a yard track laid with 33-foot rail and having joints averaging 3/4 inch low, showed that the critical speed for maximum roll effects varied from 11 to 16 mph. The truck spacing of these cars is 64 feet. Some wheel lifting occurred and the maximum lateral displacement of the car top was 14.2 inches each side of the center line of track.

—For calculating clearance requirements, the lean of the car due to unequal compression of the springs on the two sides of the truck will produce a displacement at the eaves of approximately one inch for each inch of unbalanced elevation. The maximum roll oscillation due to normal track irregularities [not the roll-resonance condition described above] is about 7 inches. Thus, for 3 inches of unbalanced elevation, the roll or lean of the car on its springs plus the normal roll oscillation approximates 10 inches. This is measured from a vertical to the plane of the track at its center line. Allowance must also be made for the track-elevation overhang on curves and about 1.5 inches for lateral play between the track gauge and wheel gauge and between the various truck parts.

● **Tie-downs for auto-rack cars.** An investigation of the loads produced in the chains used to secure automobiles to the racks of auto-rack cars indicates that the large loads which might produce chain failure or overstressing are associated with switching impacts. During actual road movements of these cars, chain loads associated with slack action or roll-resonance conditions were not high enough to exceed the elastic or yield strength of the chains. However, repeated loadings due to oscillations were found to be high

RAIL FAILURES AND TOTAL TON-MILES OF TRAFFIC

	FAILURES PER TRACK-MILE				TOTAL TRAFFIC
	All Sections		100 Lb and Less		Gross Ton-Miles
Year	No.	Per Cent	No.	Per Cent	Per Cent
1962	0.52	100	0.68	100	100
1963	0.54	104	0.70	103	103
1964	0.65	125	0.80	118	106

enough possibly to result in fatigue failure.

A considerable amount of the damage to automobiles moved in auto-rack cars is due to failure or stretching of the tie-down chains.

● **TTX cars and the track.** An investigation was conducted on two member roads to determine the effect on track, particularly curves, of the combination of a long TTX car coupled to a short car (covered hopper) when subjected to buffing forces from dynamic braking and slack action. Analysis of the data obtained has been completed for only one of the roads. In the investigation on this road, runs were made with the two test cars placed at the front end, middle and rear end of the train. Six runs were made and the trains varied from 77 cars to 136 cars.

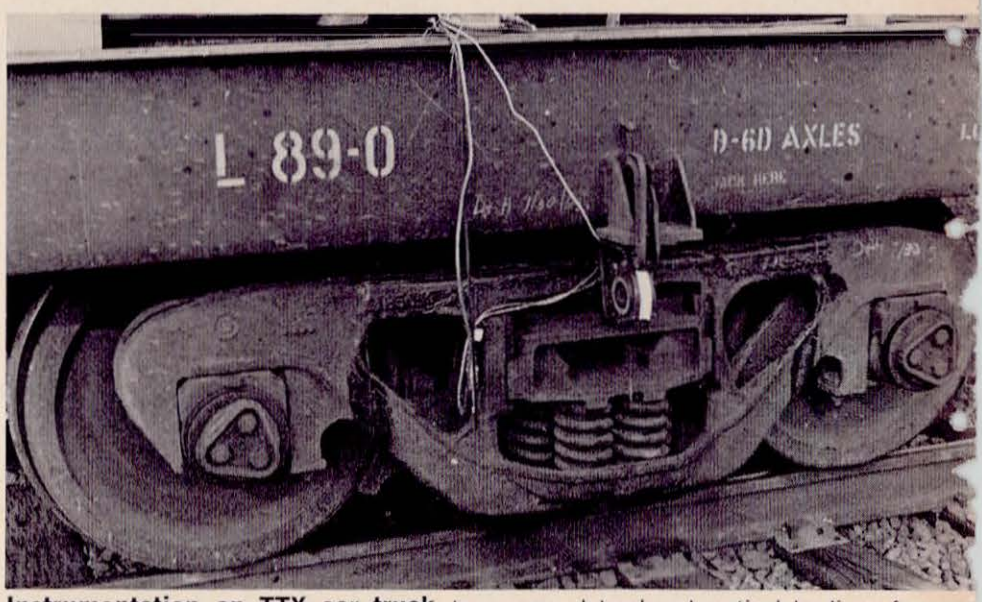
The drawbar forces exerted on the test cars due to dynamic braking were, of course, greatest when the test cars were at the front end and decreased to a negligible amount when they were at the rear. The maximum lateral force exerted on the track by one truck of the TTX car (loaded) due to dynamic braking was 5,200 lb on a 3½-degree curve with a measured drawbar buffing force of 101,200 lb.

The effects of slack action were least when the test cars were at the front of the train. The largest measured truck lateral force on a curve was 9,000 lb from a 180,000-lb drawbar pull accompanying a slack run-in on a 1½-degree curve. A drawbar buff of 140,000 lb from a slack run-in on a 3-degree curve produced a truck lateral force of 5,200 lb. The largest measured lateral forces on the two frames of the TTX truck were due to track irregularities, the maximum being 27,900 lb at a speed of 54 mph.

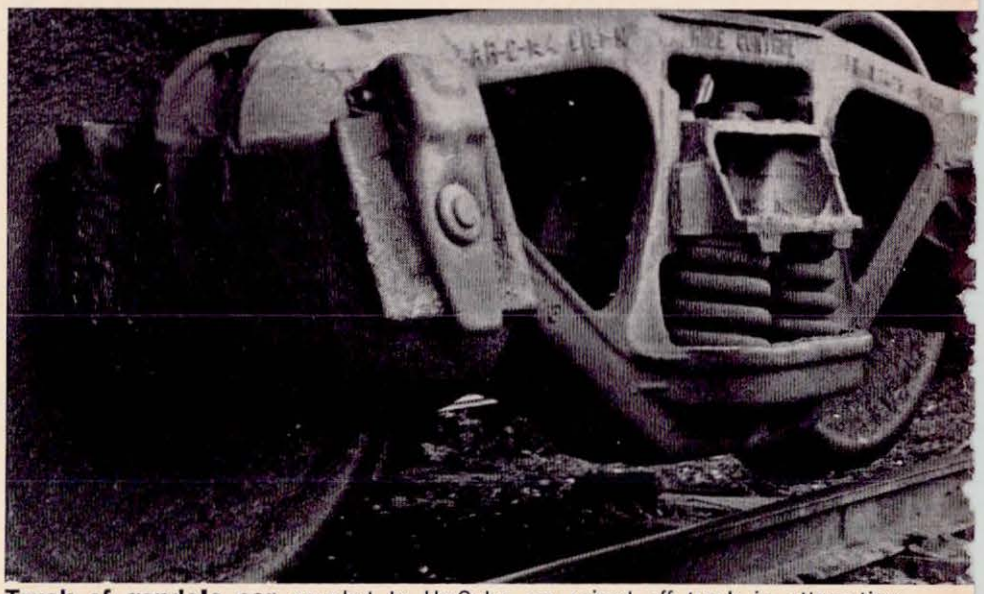
● **Tests with 100-ton hoppers.** At the request of a member road, an investigation was made of a unit coal-train operation which involved the use of new 100-ton specially built hopper cars. Derailments of one or more cars had occurred during most of the initial runs made.

In this investigation, a special train was operated over that portion of the railroad where the derailments had occurred. This train included a diesel unit, the AAR Research Car, a low-side gondola (for observation purposes), one of the 100-ton cars fully loaded, one partially loaded, and a caboose. The fully-loaded 100-ton car was instrumented to give a continuous oscillograph record of the carbody roll, track cross level and truck swivel. The train speed and mile-post locations were also shown on the record. At the start of the run, the train speed was varied to determine the critical speed for max-

Dynamic loading of tie-down chains in an auto-rack car were measured during a typical movement. The AAR research car is at the left.



Instrumentation on TTX car truck to measure lateral and vertical loading of side frame and track cross level during investigation of effects of dynamic braking.



Truck of gondola car coupled to Hy-Cube car raised off track in attempting to go around a 25-degree curve.

imum roll effect. The train was then operated as near this speed as possible and the track locations noted where maximum roll effects occurred.

The critical speed was found to be about 20 to 22 mph, considerably higher than the 12 to 15 mph found in other tests with cars of this type. Also, the maximum roll effects were quite moderate, only about one degree to each side, or two degrees total. This compares with as much as seven to eight degrees found in some tests. The track conditions were good and some of the derailments had occurred where the track had been completely resurfaced only a few weeks earlier.

● **Derailment on test run.** The derailments had all occurred by the leading wheel of one truck of a car climbing the high rail of a curve of 5 to 8 degrees. Following the run with the special train, the AAR Research Car, the observation gondola, and an instrumented 100-ton car were operated over the entire run at the head end of a 60-car train to avoid the critical speed to the extent possible. This was done by running at 30 mph or over—or, if this speed could not be maintained, at 15 mph or under. On this run the train was slowed down to the critical speed at one curve to obtain a comparison of results with the previous run. Upon starting to pick up speed, derailment occurred of one car about halfway back in the train.

When built, these 100-ton cars had been equipped with 3 11/16-inch-travel springs and two supplemental volute-type snubbers in each spring nest. The outer gibs on the bolsters had not been widened, however. Tests on other roads had indicated this to be helpful. Observation during the first test run had indicated that when going around a curve at a speed considerably below that for which the curve was superelevated, the car body moved toward the low rail and the outer gibs of the bolster seemed to be bearing hard against the opposite truck frame at the high rail. Under this condition, a slight rocking action of the car body might unload the truck frame at the high rail sufficiently for the ratio of lateral force to vertical load to become high enough to result in the wheel flange climbing the high rail.

Calculations were made which indicated that a heavy slack action combined with a two-degree rocking motion at critical speed on a curve with 6 inches of elevation would result in a ratio of lateral to vertical wheel loading that might result in flange climbing.

● **Helpful suggestions.** Since there was no clearly defined cause of the derailments, a number of measures were suggested that might be expected to be helpful. These included:

(a) Widen the outer gibs on each bolster by 3/8 inch, polish and lubricate the center plate and smooth the contact surfaces of the two wedges that provide damping.

(b) Check the track at locations where maximum roll effects were recorded, making any improvements indicated to be needed.

(c) Reduce the superelevation on curves to 4 inches maximum and preferably 3 inches.

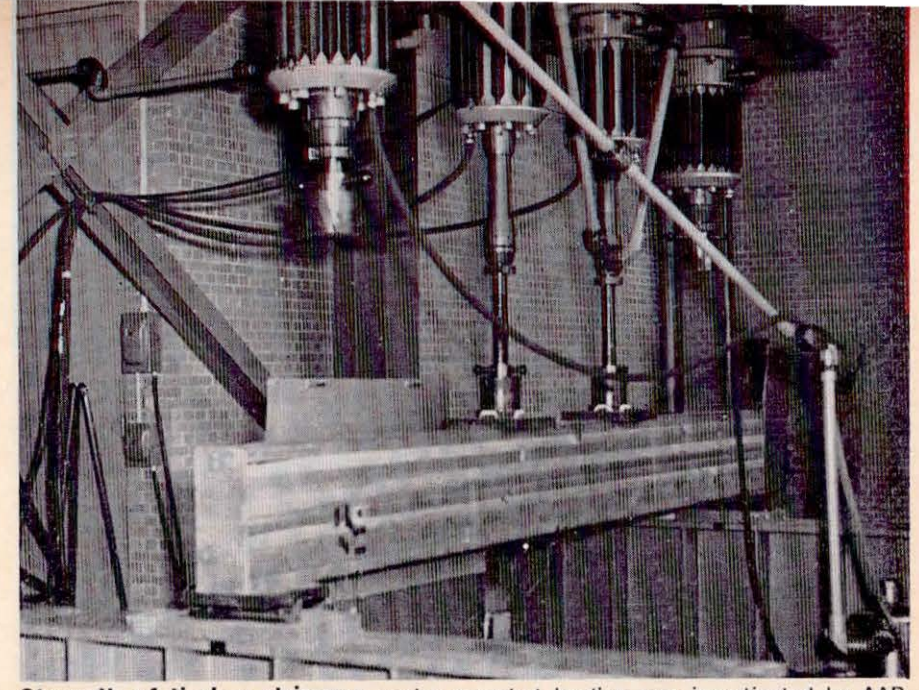
(d) Lubricate the high rail of any curves not being lubricated.

The changes to the bolsters indicated in (a) above were put through on a crash program by discontinuing operation of the unit coal train for two weeks. Since that time in a period of several months there have been no further derailments.

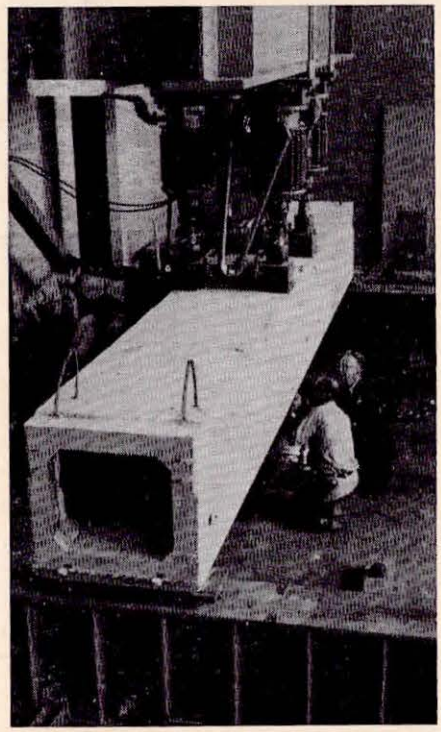
Because of the importance of this matter and the uncertainty as to just what condition of track or equipment, or combination thereof, was responsible for the derailments, the railroad is providing a special guard rail with 3½-inch flangeway on a 9-degree curve on a branch line. It is proposed to experiment with changes in track cross level and alignment, in truck arrangements, and in speed and cross level to determine what conditions cause flange climbing. The guard rail will be positioned to permit the wheel flange to climb up on top of the high rail but not to drop off on the field side. It is hoped that motion pictures and measurements of the vertical and lateral wheel loading can be obtained at the instant the wheel flange climbs.

● **Hotbox performance.** Hotboxes are of interest to railway maintenance personnel because they may result in burned-off journals, causing costly derailments. As a result of AAR research activities leading to the substitution of journal lubricators for waste packing and other improvements, the number of freight-car miles between hotbox setouts has increased from 225,976 in 1960 to 1,015,936 in 1963 and 1,351,446 in 1965 (eleven months).

Unfortunately, the number of burn-off journals has not decreased proportionately as much as the number of hotbox setouts. The latter went down from 138,695 in 1960 to 31,088 in 1963 and to 24,627 in 1965, where-



Strength of timber stringers under repeated loading was investigated by AAR.



Investigation of strength under repeated loading of a prestressed concrete through-voided box girder at the AAR Research Center.

Hotbox-detection research will continue

as the number of burned-off journals decreased from 639 in 1960 to 421 in 1963 (the last year for which figures are available). But this still represents a substantial decrease. Research is planned for this year to develop more effective means of hotbox detection to prevent burned-off journals. The objective is to develop a device to be placed on each journal box which will immediately signal the train crew, probably by electronic means, that the journal-box temperature has exceeded an allowable amount.

TIE TESTS: PRESTRESSED CONCRETE vs OAK

	Prestressed concrete ties AVERAGE	Wood ties AVERAGE
Rail flexural stress in base (psi)	8,940	9,810
Track modulus (psi)	11,700	6,700

● **Tests with concrete ties.** Measurements were made on a test section of continuous-welded rail laid on prestressed concrete ties and an adjoining control section with all new treated-oak ties. The rail was 132-lb RE, the concrete ties were the AAR design on 30-inch centers, and the wood ties were 7 inches by 9 inches by 8½ feet on 22½-inch centers. Measurements were obtained at 17 consecutive ties, with the results shown in the table above.

The reason for the very high track modulus* is not fully understood. Normally, the track modulus for wood ties is from 2000 to 3000. Tests made by the late Dr. Talbot showed a track modulus of 5000 to 6000 on GEO** track with all new ties. This would indicate that there is much more compression of the tie fibers by the tie plate after ties have been in track for some time. This needs to be further explored.

At the close of 1965 there were about 250,000 AAR prestressed concrete ties in track. Service experience has pointed out areas where improvements could be made in the design and this has been done. The design of tie now recommended by the Research Center is shown in report ER-58, "Prestressed Concrete Tie Investigation—2nd Report."

● **Shear in wood stringers.** Static and repeated load tests have been completed on full-size untreated glued-laminated stringers made of both pine and fir. Similar tests have been completed on solid sawn, treated fir stringers. Tests are now under way on treated pine stringers. Although this investigation has not been completed, it has been found that, under static bending, all stringers fail in tension at or near the load points. Under repeated loading, all stringers fail from horizontal shear starting near the neutral axis at the ends.

If these shear failures extend the full length of the stringers their supporting strength will be decreased by about 50% and their deflection for a given load will be increased about four times. Hence, in inspecting timber bridges, attention should be directed to the detection of shear failures because such failures give an advance warning of impairment of supporting strength, with a corresponding transfer of load to the other stringers in the chord.

Another significant finding from the investigation is that the critical shear stress occurs with the wheel load positioned three times the depth of the stringer from the support. Although the shear stress is theoretically a maximum when the load is just clear of the support, the shear strength of the wood is evidently increased by the compression effects from the load.

● **Concrete box-girder design.** As a result of extensive static and repeated load tests at the Research Center, a design of a through-voided prestressed concrete box girder*, prepared by the AREA Masonry committee, the Portland Cement Association and the Prestressed Concrete Institute, was adopted for inclusion in the AREA Manual. The girder is 33 inches deep, 28 feet long and 36 inches or 48 inches wide. Girders of this design are placed side by side to form a solid floor for a ballast deck.

Extensive tests at the Research Center have resulted in a recommendation being incorporated in the AREA Manual for the use of an epoxy-sand mixture for bonding prestressed concrete box girders together to obtain integral deflection action and maximum supporting strength. Proportions, directions for mixing and placing, and formulation of the epoxy are included.

● **Forces in bridges.** The AREA Manual specifies that a longitudinal load of either 15% of the total live load on the structure for braking or 25% of the load on the drivers for traction be provided for in the design of the substructure.

All of the field tests that have been made by the Research Center on bridges that do not have rail expansion joints have indicated that the longitudinal forces due to traction and braking are mostly carried by the rails and only one-tenth of the specified values are resisted by piers or bents.

● **Weighing cars in motion.** During the year reports were issued of studies conducted on a single-draft, electronic scale for weighing cars uncoupled in motion on the Canadian National and also on a two-draft, electronic scale for weighing cars coupled in motion on the Western Maryland.

In the uncoupled-in-motion weighing, the maximum deviation in weight with respect to the true weight was 80 lb. In the coupled-in-motion weighing, the maximum deviation in the weight of any car compared with its true weight was 580 lb and 94% of the weighings were within a deviation of 320 lb. For both scales there was no relation indicated between the amount of the deviation or error in weighing and the total weight of the car.

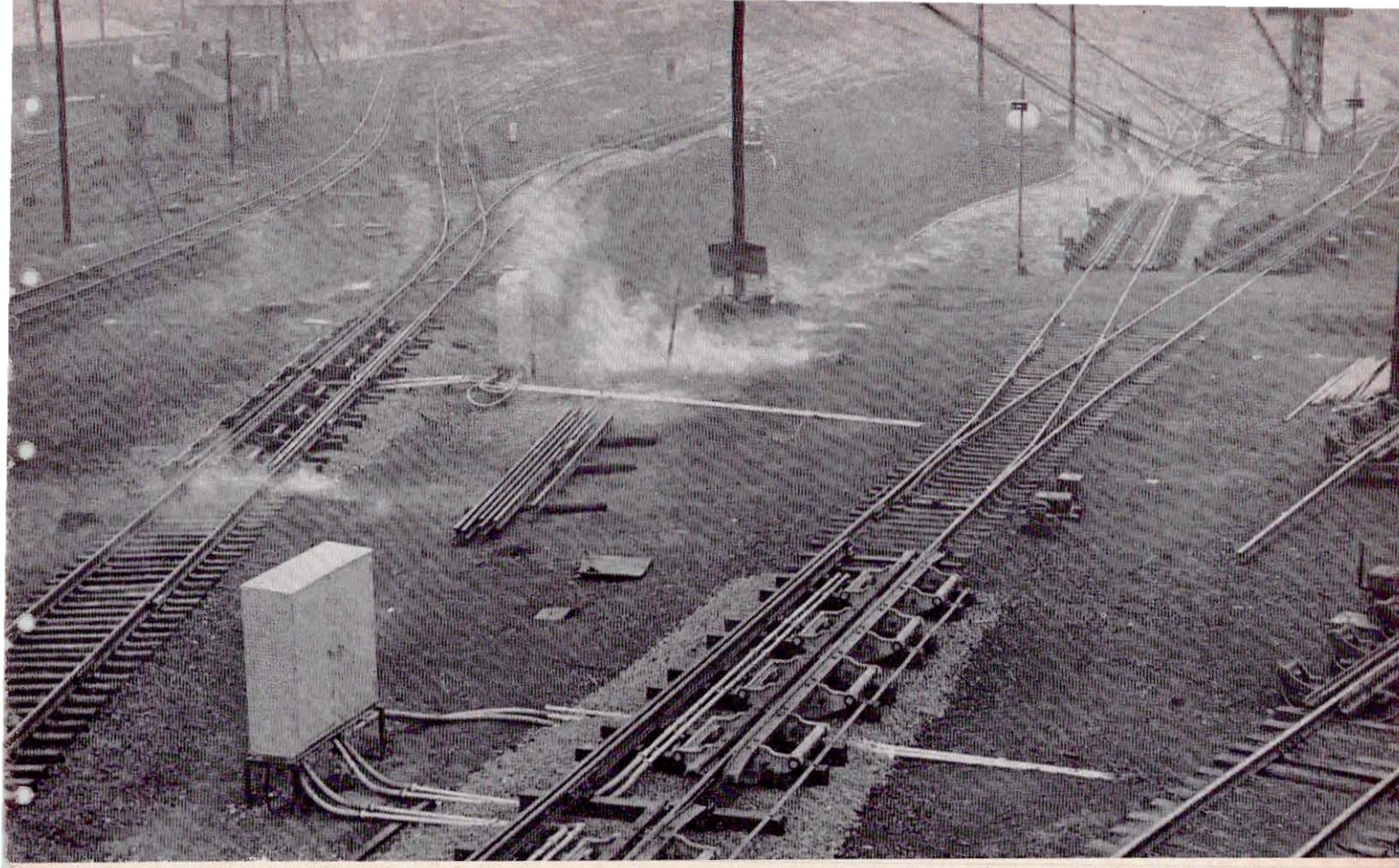
● **Research car.** Several years ago the Research Center acquired the stainless steel Budd research car at a nominal cost. Last year, the Burlington completed remodeling the car to adapt it for use as an AAR instrument and track inspection car. The car has kitchen, dining, sleeping, and lavatory facilities to accommodate a crew of seven on extended road trips. It also has a dark room, office, adequate space for instruments and several coach seats for observers. Installation of instrumentation and track-inspection equipment will be made as expeditiously as time and funds permit. This car will be quite useful, and in fact was used in two investigations during the latter part of the year.

We have had a busy year with substantial accomplishments. We are anticipating an even more eventful one in 1966. ■

*The track modulus is an indication of the stiffness of the rail support and is defined as the number of pounds per lineal inch of rail required to depress the rail one inch.

**A type of track used extensively in Germany in which rails are fastened to the tie plates by bolts extending through rigid clips, and each tie plate is fastened to the tie by four screw spikes.

*An article in Railway Age, Feb. 14, p. 22, described a new Rock Island bridge that conforms to the new design.



WORK IS DONE IN STAGES: The yard alterations are being carried out on one track at a time to minimize interference to yard operation. Here, the retarder ends of the track groups No. 1 and No. 2 (left) have been completed and No. 3 (right) is nearing completion. At this time no work had been done on track group No. 4 (far right).

RF&P modernizes Potomac hump yard

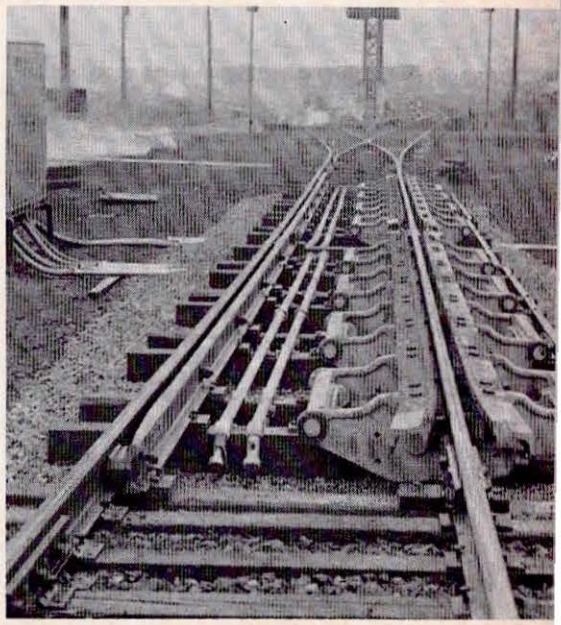
The road has begun a $1.2-million revamping of the northbound classification tracks to speed the switching operations there.

Today's longer and heavier cars are causing some railroads to look over their older retarder yards with the idea of increasing their efficiency and economy of operation. This is because some of the old retarders are too short for the longer cars and are not designed with sufficient retardation to handle 100- to 150-ton cars.

The Richmond, Fredericksburg & Potomac is one such road. Its Potomac yard at Alexandria, Va., has two hump yards, one for classifying southbound cars and the other northbound cars. The southbound yard was equipped with retarders in 1945 and was modernized in 1959. The northbound yard was built in 1930. It is this yard the road is modernizing. The work under way will increase the switching capacity and efficiency of the northbound yard.

● **Work being done under traffic.** Complicating the work of modernization is the fact that it must be done while the yard is in operation. The amount of business handled is such that only one track group can be spared at a time. In fact, work had to stop for a two-week period prior to Christmas to take care of peak traffic.

The existing northbound classification yard is comprised of 49 body tracks divided into eight groups of five to 10 tracks each. After cars are pushed over the hump crest, they pass over a track scale, a master retarder of 32 cylinders, one of three intermediate retarders of 20 cylinders each, and one of eight



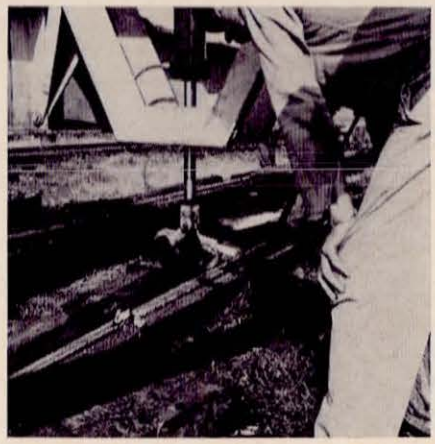
NEW RETARDERS INSTALLED: Plans call for replacing the three intermediate retarders with the weight-responsive hydraulic type. Notches cut in the surface of rail at left produce vibrations from moving car wheels. The vibration frequency is transmitted to control equipment that determines the speed of car. The velocity information is used to set position of retarder shoes along rail at right for controlling car speed.

THE 'MONSTER': Entire turnouts, lifted out of their beds by a wheeled carrier, are moved out of the area to permit grading equipment to work. This carrier, designed and built by EJ&E forces, was borrowed for the work at Potomac Yard. After turnouts are rehabilitated they are moved to their new location by the carrier.

group retarders of 18 cylinders each, except two which have 20 cylinders each. The retarders are electro-pneumatic.

The northbound yard has several disadvantages. For one thing it is manually controlled and requires three retarder operators and three car riders per work shift. It requires the setting of brakes on five cars at the end of each classification track. Moreover, with track grades averaging 0.33%, some cars couple at excessive speeds, causing damage to cars and lading.

● **Will eliminate field men.** To modernize the yard, the RF&P decided to reduce the gradients of the body tracks from 0.33% to 0.10%. The latter grade, considered non-accelerating, is sufficient to maintain a car's speed after it leaves the group retarder. To preclude the need for field men, it was decided to install inert car retarders at the ends of the classification tracks. Beyond the inert retarders a light ascending grade will be introduced to prevent uncoupled cars which may be pushed through the retarder from rolling into live tracks.



'MONSTER'S' HANDS: Four pairs of double-acting hydraulic rams, fitted at their lower ends with rail clamps, enable the carrier to grasp turnout rails, pick them up and set them down.

To obtain the required velocity head, the hump grade is being increased through the group retarders and switch area. The grading involves lowering this area a maximum of about 30 inches and raising the leaving ends of the body tracks a maximum of 18 inches. Because of a proposed change in track groupings, this work also involves the relocation of turnouts and the addition of cylinders to the group retarders.

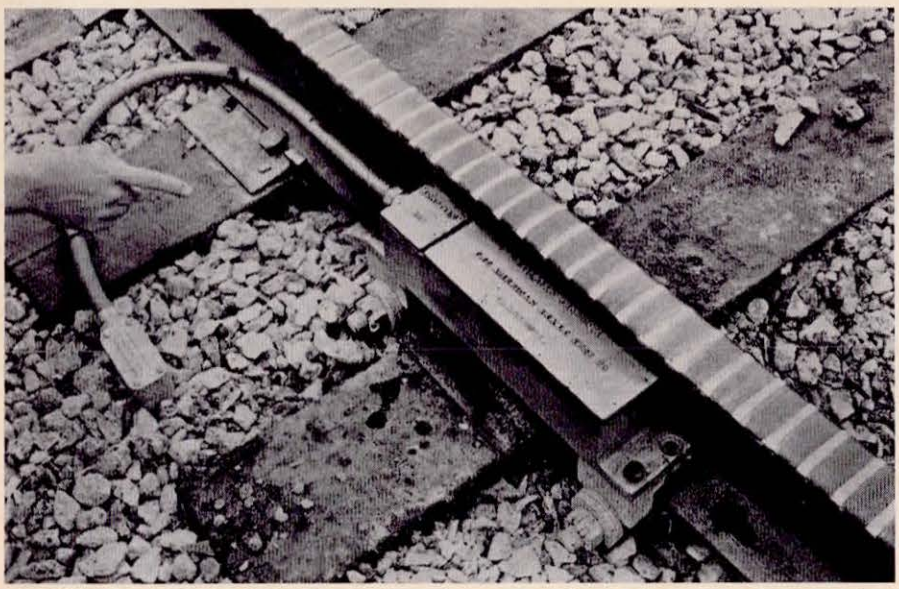
Under the proposed arrangement, the 49 classification tracks will be divided into six groups—five eight-track groups and one nine-track group—to replace the present eight groups. Each new group will be served by a 32-cylinder electro-pneumatic retarder. The three intermediate retarders will be replaced by three American Brake Shoe weight-responsive hydraulic retarders, each consisting of two 39-foot sections and equipped with speed-sensing units. The electro-pneumatic retarder cylinders released by replacement of the intermediate retarders and by the grouping of tracks will be used to increase the retardation of the group retarders. The speed-sensing units will also be added to the electro-pneumatic master and group retarders.

A work procedure has been adopted to minimize the time the tracks will be inoperative due to construction. Taking one group at a time, the group retarder and turnouts are removed to permit earthmoving equipment to move in and quickly excavate to the desired subgrade. A temporary run-off grade to the undisturbed tracks is made at this time. The retarders are increased in capacity by adding cylinders and, along with turnouts, are installed in their new location.

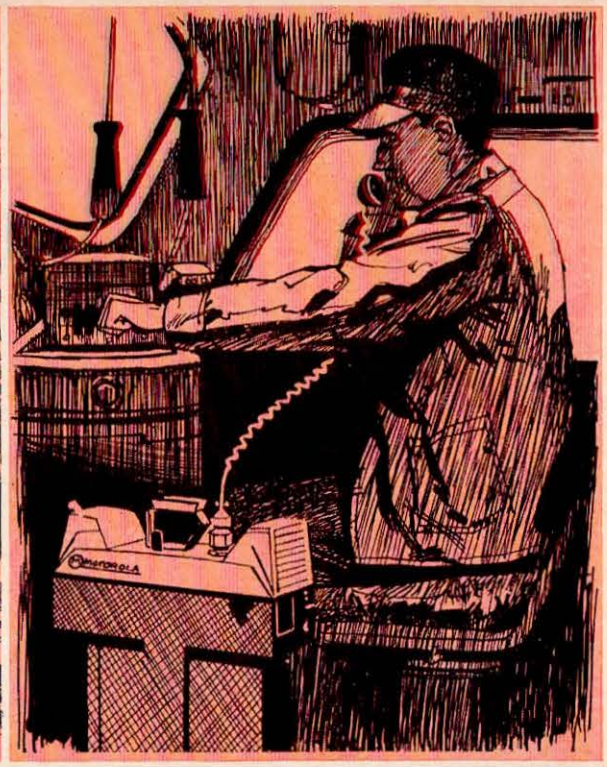
● **'Monster' is used.** The machine used to handle the turnouts was designed and constructed by forces of the Elgin, Joliet & Eastern. It was borrowed expressly for this job because of the speed with which it can remove and handle a turnout without disassembling it.

The machine lifts the turnouts intact out of their beds and removes them from the grading area. While the grading is going on the turnouts are rehabilitated, then carried back to their new locations. The machine is appro-

(*Continued on page 44*)

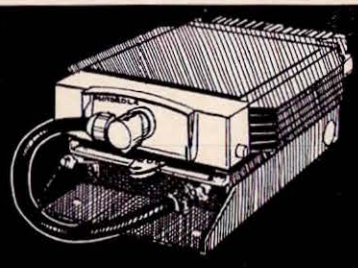


PICKING UP VIBRATIONS: A speed-sensing device, firmly fastened to the notched rail 20 ft ahead of the retarder, has a transducer that notes vibration frequency and transmits it to an electronic control panel for directing the car's exit speed.



COMPLETE RAILROAD RADIO EXPERIENCE

...the extra value dividend from the industry leader.



CALL ON MOTOROLA

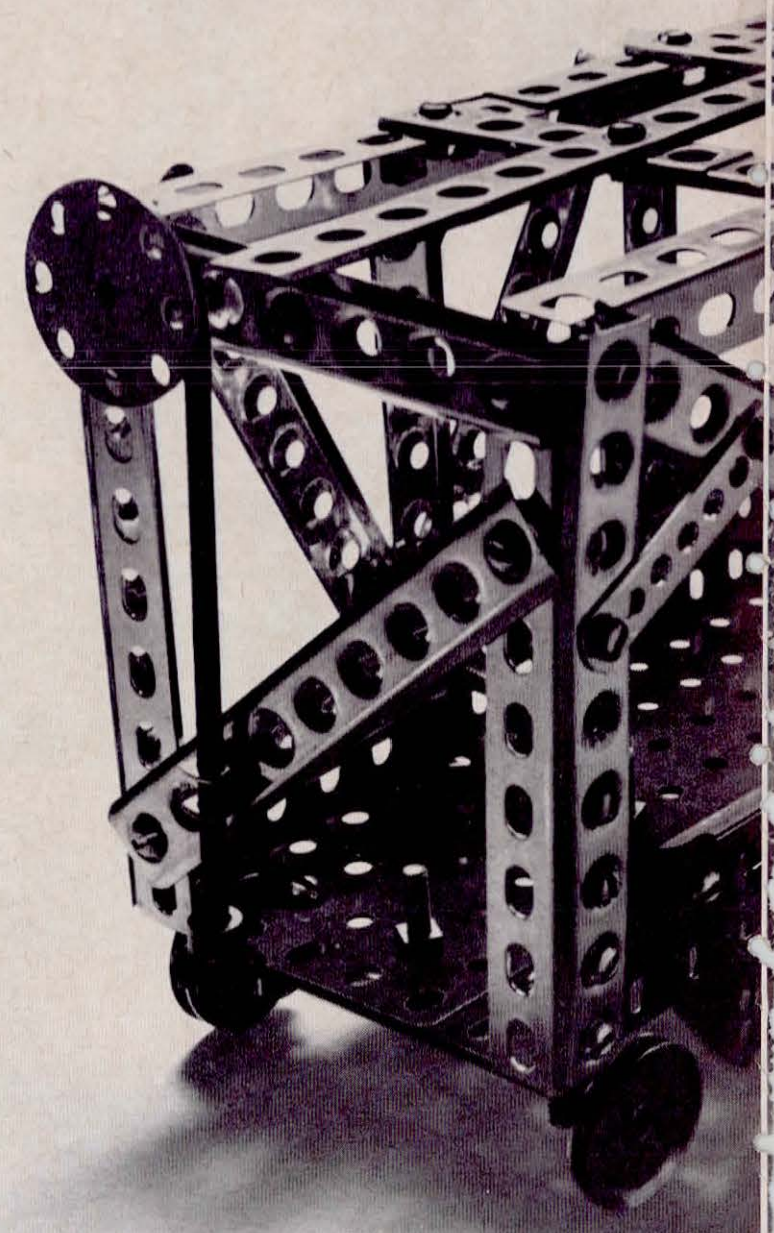
. . . you'll get more in communications . . . service . . . satisfaction. *Experience* is the answer! Over 15 years ago Motorola started its railroad radio specialist team. The result: The industry's most complete . . . most reliable line of railroad-proved communications equipment. You can count on ✓ personalized service from an experienced railroad radio specialist. He stands ready to put the right equipment on the job ✓ quickly, ✓ economically! From ✓ microwave and ✓ 2-way radio coverage of your entire system, right down to multiplying the efficiency of your men-on-foot with ✓ "Handie-Talkie" portable and pocket-sized units, Motorola ✓ *experience* makes sure your communication $$'s stay profitably on-the-job! For full line facts, write Dept. ARA 616

MOTOROLA RAILROAD RADIO

Motorola Communications & Electronics, Inc., A Subsidiary of Motorola Inc., 4501 Augusta Boulevard, Chicago 51, Illinois

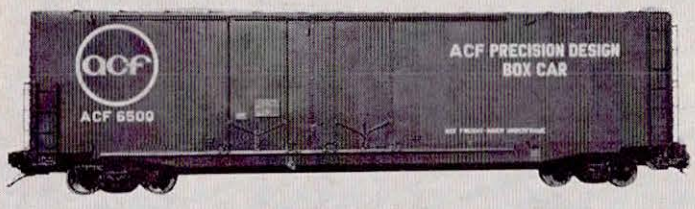
Circle 30 on reader service card

Circle 31 on reader service card ►



Why toy with needless deadweight in your boxcars?

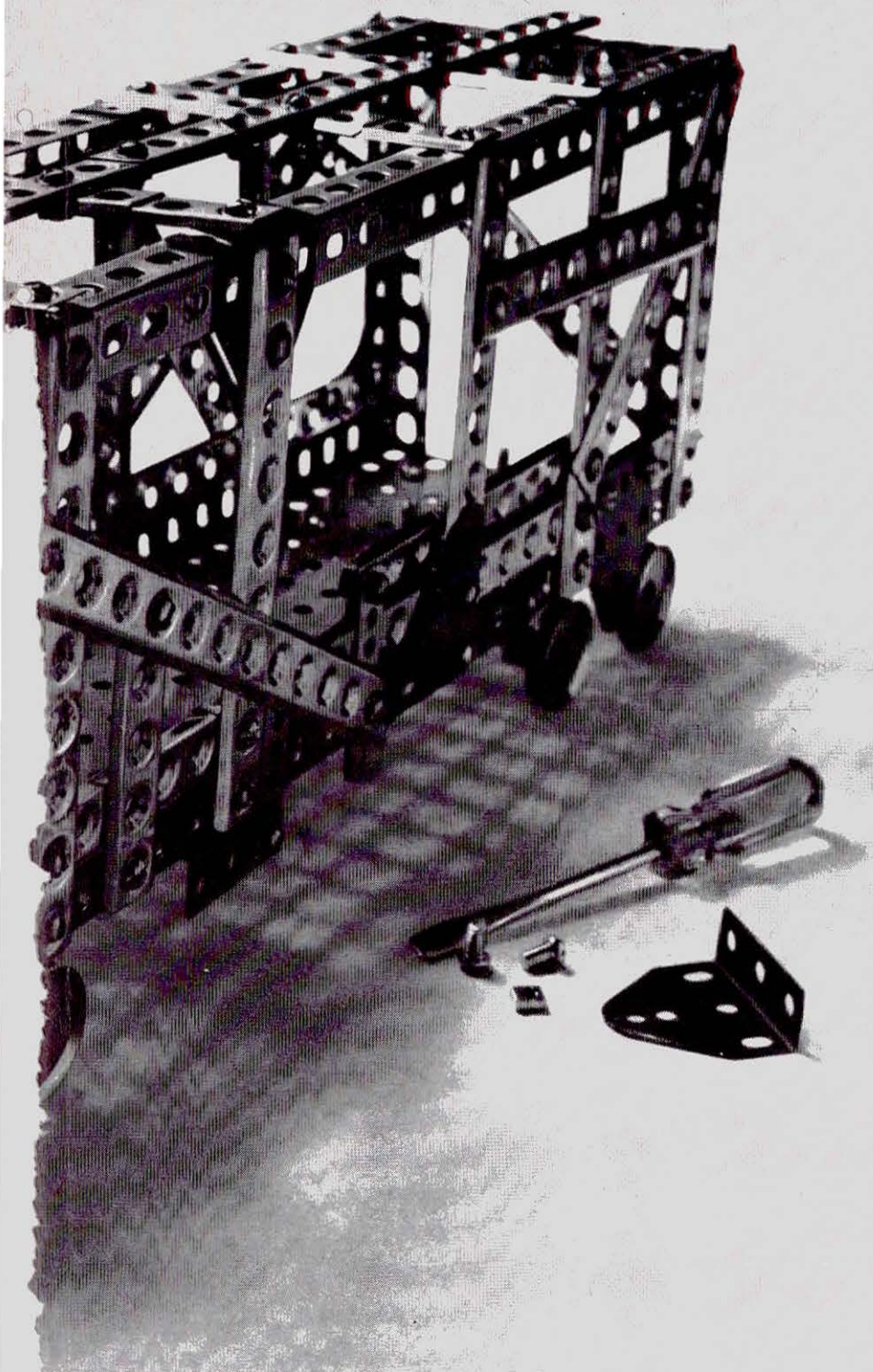
(ACF Precision Design saves up to 3 tons, puts the strength where you need it)



Patching on pieces here and there is not the most efficient way to make your boxcars stronger. (Even in a toy it adds a lot of needless weight.)

Which is why ACF developed Precision Design™ Boxcars. Through scientific use of 8 key structural components, you eliminate up to 3 tons deadweight. And get boxcars with strength where you need it for longer service life. (Lower maintenance as well.)

ACF designed and tested standard sliding and fixed center sills, bolsters, crossbearers, stringers, side sills



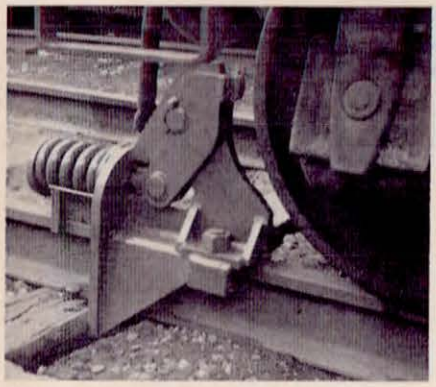
and door posts. These vary in size, number and material grade according to the car you want.

Flexibility? Take your choice of 50-ft. or 60-ft. boxcars. Floor loads from 12,000 to 60,000 lbs. Interior equipment. Cushioning devices. And door openings from 54 options.

Over 10,000 ACF Precision Design Boxcars are now giving tiptop performance. For details write American Car & Foundry Division, ACF Industries, Incorporated, St. Charles, Missouri 63301, or our sales offices in Chicago, Philadelphia, St. Louis, San Francisco, Washington, D.C.

acf ACF INDUSTRIES

NEW PRODUCTS REPORT

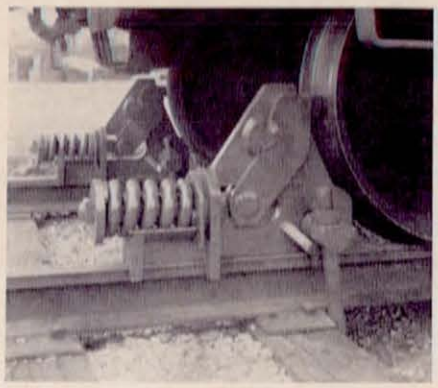


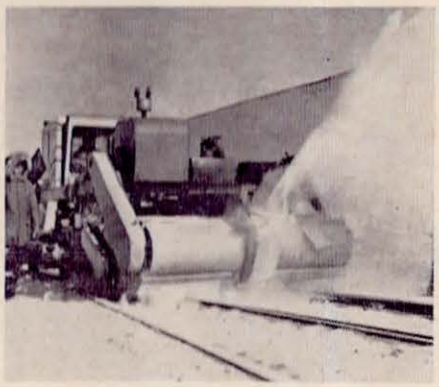
Wheel Bumpers (RA-1)

Cushioned stopping of cars by wheel contact at the ends of a track is now possible with the use of wheel bumpers. These devices have nested springs which compress through a 1-to-2 ratio lever action. When the springs are fully compressed, the residual shock is taken by a shock pad and the wheel finally comes to rest. The wheel bumpers are available in two models.

Model Y bumper (left above) works with a double-cushioning action. One cushioning effect is obtained by using the Shock-free design of nested springs to absorb impact that would otherwise force movement of the tie in the ballast. The other is obtained by having the entire bumper unit free to yield when hit, pushing the tie in the ballast.

Model NY (right above) is designed for locations where track room is at a premium as it uses the track up to its end. In addition to the nested-spring cushioning action, it is held to the rail by a loop placed under the rail and next to a tie which permits limited movement of the bumper unit as it tightens. *The Brice Hayes Co.*





Snow Blower (RA-2)

Powered by two 55-hp air-cooled engines which are said to provide adequate power for all snow conditions, the Model SC-4 pusher-type switch cleaner will remove all forms of snow without damage to track through the employment of used train-line hoses as brush elements, it is claimed. The discharge chute can be rotated from the operator's cabin to direct snow to either side of the track. It employs a 10,000-cfm axial blower for dispersing the snow. *Tamper, Inc.*

Track-Recording Car (RA-3)

The Matisa Trackfax car is now available as an electronically motivated unit known as Model SD 10. This self-propelled vehicle is designed to measure under load both the geometric and dynamic characteristics of the track, to effect recordings of numerous parameters simultaneously and at speeds of 35 mph to 50 mph, and to interpret quickly the values obtained in order to compare them with previous readings. The SD 10 is a symmetrical vehicle carried on two axles and has equipment for recording gauge, skew, cant, curvature of both rails, high and low points in both rails, vertical accelerations associated with both rails, and transverse accelerations associated with alignment.

Classifying equipment is provided which is said to interpret the recordings automatically and instantaneously. For each parameter examined the values recorded are classified into ten grades. Ten counters show the number of values falling into each category. This method enables a comparison to be made between recordings made at different times. *Matisa Equipment Corp.*

RAILWAY AGE
WEEKLY

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. George Johnson)
PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS IN ADVERTISEMENTS NUMBERED: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

PLEASE SEND INFORMATION ABOUT PRODUCTS DESCRIBED ON PAGES 30, 31 and 32 MARKED RA-1 RA-2 RA-3 RA-4 RA-5 RA-6 RA-7 RA-8 RA-9 RA-10 RA-11 RA-12 RA-13 RA-14

NAME ..... TITLE.....

COMPANY .....

ADDRESS .....

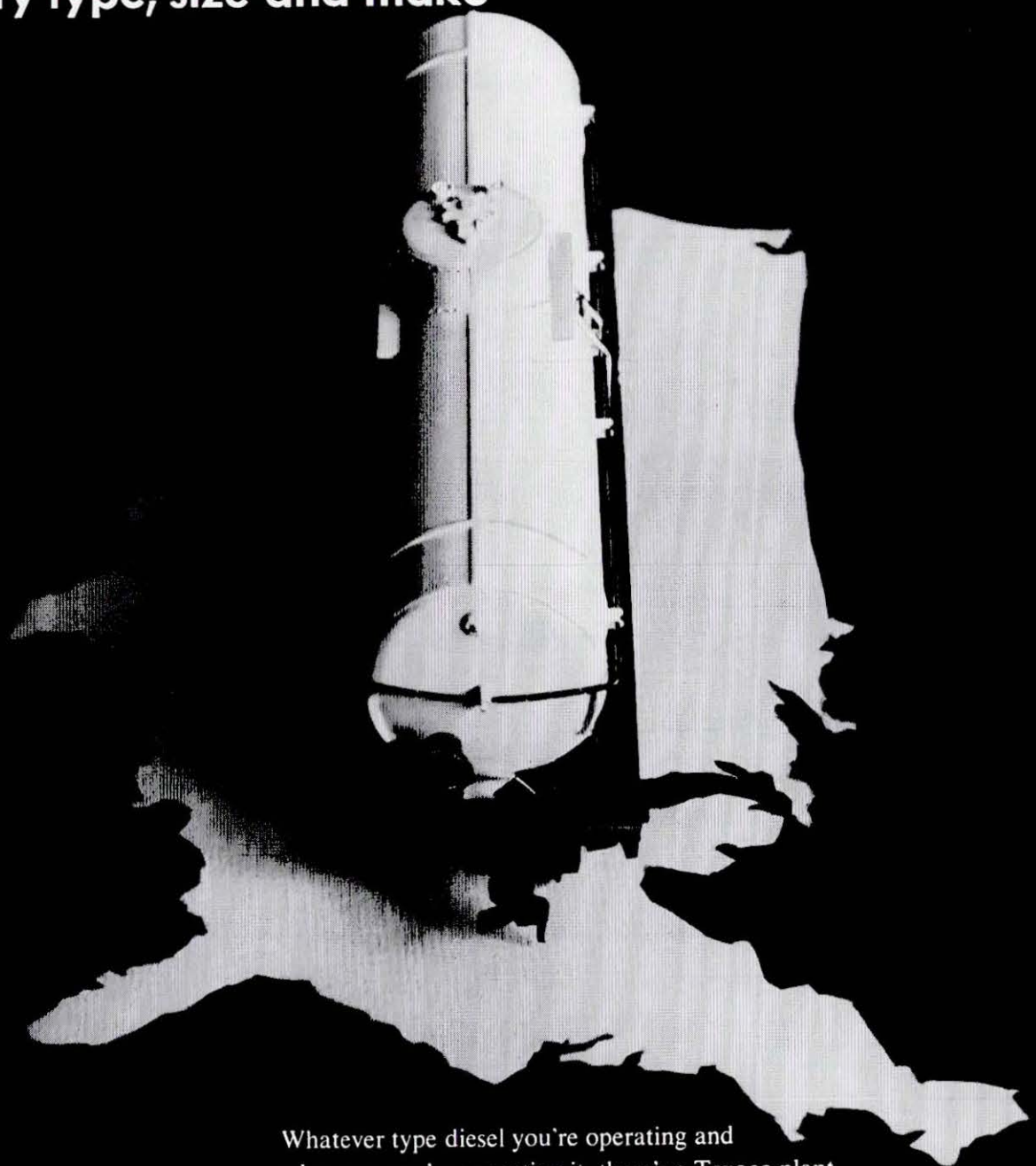
CITY ..... ZONE ..... STATE .....

3/14/66

☐ Please send information about subscribing to Railway Age

CONTINUED ON PAGE 31

Nationwide, more than 100 Texaco tank-car loading plants can supply fuel for diesels of every type, size and make



Whatever type diesel you're operating and wherever you're operating it, there's a Texaco plant nearby that can supply you with exactly the fuel you need. • Along with Texaco diesel fuels, Texaco lubricants and Systematic Engineering Service are your best assurance of maintaining high engine availability. • Find out how easy it is to get the best. Just call the nearest Texaco Railway Sales office (there's one in New York, Chicago, San Francisco, Minneapolis, St. Louis and Atlanta), or write to Texaco Inc., *Railway Sales Division*, 135 East 42nd Street, New York, N.Y. 10017.

TEXACO

RCA cuts your microwave maintenance

Cut back on your maintenance costs and get better communications with RCA's CW-60 Total Solid State Heterodyne Microwave (today's only *tubeless* 6 KMC microwave system in production and in service). Here's why—CW-60 heterodyne repeater design eliminates baseband regulators and automatic frequency controls. You don't need them. And heterodyne operation gives you better communications clarity, no distortion, constant signal levels over distances of 100 or 1,000 miles. Unprecedented reliability, too, with total solid state design. No power-consuming klystrons and power supplies. There isn't a single tube or mechanical relay in the entire system. And best news of all—*a CW-60 heterodyne system costs no more than a "transistorized-with-klystron" system.*

Find out what else is "in," what's "out" in RCA CW-60 Microwave. Send for this fact-filled booklet containing complete system descriptions and operating specifications. Write RCA Microwave, Dept. **HB-246,** Bldg. 15-5, Camden, N.J. 08102

THESE ARE
THE PARTS WE THREW AWAY

The Most Trusted Name in Electronics

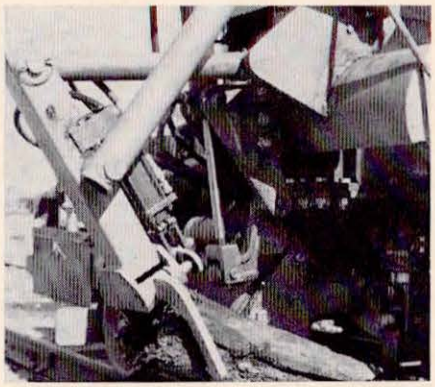
Circle 12 on reader service card

◀Circle 11 on reader service card

NEW PRODUCTS REPORT

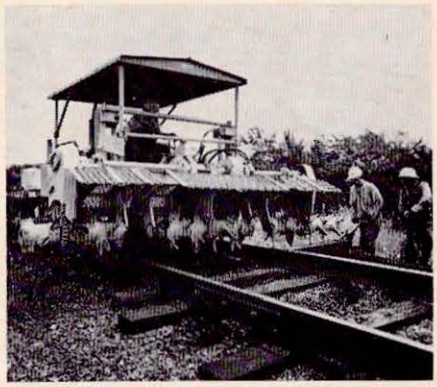
Ballast Equalizer (RA-4)

An increase in production and greater ease of operation are claimed as the result of improvements made to Kalamazoo's T-40 Ballast Equalizer. These include a completely new front plow with all operations controlled from the cab and no mechanical adjustments being required, an increase in capacity of heavier ballast wings which have a wider range of horizontal position, and an improved tie-end plow with heavy-duty rooter teeth. *Kalamazoo Manufacturing Co.*



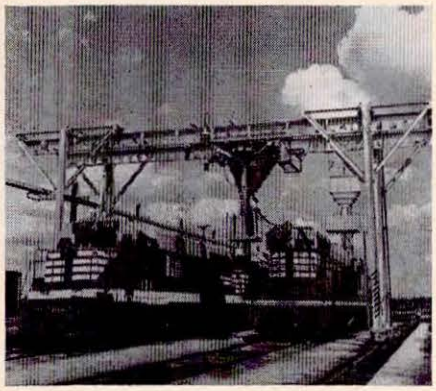
Tie-Center Remover (RA-5)

A new attachment, designated the "Iron Hand," has been developed for the Kershaw Dual Tie Saw for removing the center tie sections from between the rails. After a tie is cut into three pieces and the center section raised, the Iron Hand reaches in, grasps the center tie section and extracts it, dropping it on the track shoulder. It speeds up the operation of the saw by permitting the machine to work forward all the time. *Kershaw Manufacturing Co.*



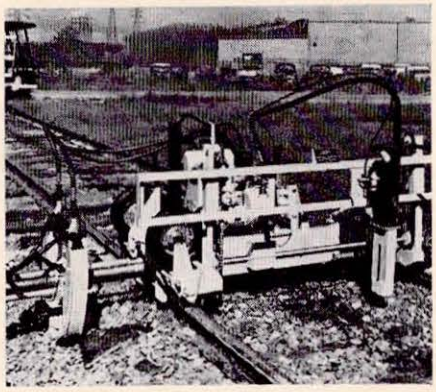
Scarifier-Inserter (RA-6)

Improvements to the Fairmont W87 Tie Bed Scarifier and Tie Inserter have been announced. This model, designated the W87, Series D, has an enclosed, all-gear drive for the two hydraulic pumps, vane motors to drive the scarifier and inserter, self-aligning axle and brake-shaft bearings, larger capacity flexible coupling on right side of scarifier speed reducer, improved speed reducer for inserter drive and reformed deck and floor plates. *Fairmont Railway Motors, Inc.*



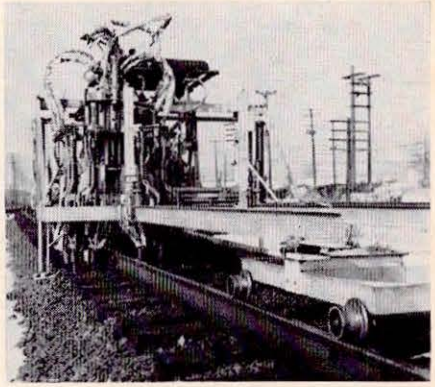
Sanding Gantry (RA-7)

A new way to provide sand to locomotives is available. Instead of positioning individual diesel units at a stationary sand hopper, the new facility is a one-man gantry sander that can service several stationary units regardless of the diverse positions of their sand boxes. All controls for the sanding operation are on the operator's platform. The latter can be moved to position the operator next to the box being serviced. *Whiting Corp.*



Switch-Tie Renewer (RA-8)

The Tamper tie renewer is being offered as a means of mechanizing switch-tie renewals without the need for cables or hooks. Serrated clamps grip the ties and only eight strokes are said to be required to remove a standard-length tie. Since the reactionary force is applied to the rail right at the point where the tie is being removed, there is said to be no danger of disturbing track line. The machine may also be used to insert ties. *Tamper, Inc.*

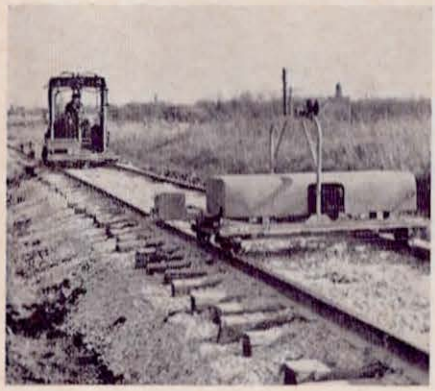


Spot Tamper (RA-9)

High-speed joint and spot surfacing is said to be possible with the new McWilliams Hydraulic Spot Tamper "8." This unit has a single transversing head that holds eight high-powered hydraulic tamping guns that work in unison over either rail. Powered by a GM 3-53 diesel engine, this new tamper is designed to produce durable tamping. It is particularly suitable for use behind the RMC Joint Straightener and tie gangs. *Railway Maintenance Corp.*

CONTINUED ON PAGE 32

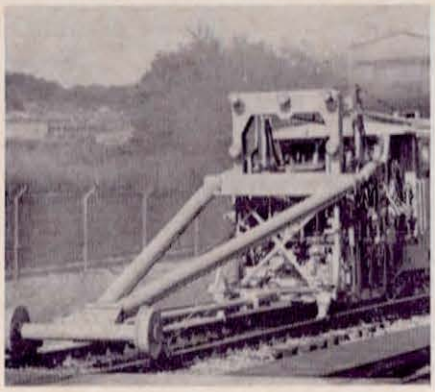
NEW PRODUCTS REPORT



Track-Lining Device (RA-10)

A new electronic track-lining device or indicator, known as the Fairmont W112 Series A, has been announced. In essence it consists of three small cars. The first or lead car transmits keyed light that is received by a cell on the rear or infrared car. Before the light beam reaches the rear car, it passes through a narrow vertical slot in the mask of the middle or indicator car. By suitable electronic and mechanical means, the light received by the infrared car shifts the scale on the indicator car to show the operator the direction and magnitude of the throw required.

On tangent track the target car is remotely controlled as to position by coded light sent from the indicator car. It can be as much as 700 feet from the lining machine. On curves, the target car is positioned by a drawbar, and located 31 feet ahead of the indicator car. The indicator car is attached to and directly in front of the lining machine. The infrared car is positioned by a drawbar behind the lining machine and 31 feet from the mask on the indicator car. *Fairmont Railway Motors.*



Tamper-Liner (RA-11)

Improvements have been announced in the Matisa Universal Speedtamper which is designed to tamp, level and line track through turnouts and railroad crossings as well as on open track. In addition, this machine has a unit for recording track alignment on tape so that a comparison may be made before and after passage of the machine.

Designated the Universal Speedtamper Series 80, Model BUNRI, it is equipped with the same automatic leveling and lining equipment as is used on the Model BNR 60 tamper. But a different type of forcing system is used to raise the track. It employs the arching principle of raising by using the rear wheels of the Speedtamper as one base and a pair of wheels mounted at the forward end of a boom projecting ahead of the machine as the second base. Using rail hooks positioned under the forward end of the tamper, the arching of the boom causes the track to be raised the amount called for by the measuring system. The amount of raise is pre-set in the automatic leveling equipment and a dial shows the amount. *Matisa Equipment Corp.*

Switching Locomotive (RA-12)

The "Unilok" Car Mover, a new German-designed switching locomotive and off-track vehicle, has been introduced in this country by Railway Maintenance Corp. Initially, the "Unilok" will be made in Europe, although RMC plans to produce it at its Pittsburgh district plant. The "Unilok" is said to have an extremely high tractive effort for its weight, largely because of rubber-tired drive wheels and the load-transfer mechanism.

Front wheels are flanged but the rear wheels are equipped with guide wheels to keep them on the rails. Off-track operation is by means of the rear drive wheels and a pair of front steering wheels, which are raised and lowered hydraulically as required.

The "Unilok" does not require a prepared crossing for moving to or from the rails, it is said. It crosses rails by raising and lowering the front steering wheels, then is lifted on a turntable, and turned 90 deg for positioning on the track. The unit can be fitted with a fork-lift attachment, hydraulic crane, dozer blade, or other attachments. *Railway Maintenance Corp.*

New Joint Bar (RA-13)

A number of years ago Poor & Co. introduced a new type of joint bar designated the Sure-Fit. At that time patent difficulties were encountered and the bar was not placed on the market. A patent has now been issued and the bar is being offered for railroad use.

Several advantages are claimed through the use of the new design. It features a curved outer face between the top and bottom flanges of the bars. Advantages: (1) improved bearing between bolt assembly and face of joint bars; (2) reduced stress in bolts; and (3) bars compel correct seating, reducing stress in them and in the rails.

The Sure-Fit design, it is stated, provides a rail joint with an outer face having the bolt assembly seating area at or near the longitudinal center line of the bolt holes. This bearing zone is located outwardly beyond the remainder of the face so that, when the bolts are tightened, contact is always closer to the axis of the bolts. *Railway Products Division, Poor & Co., Inc.*

Grade Crossings (RA-14)

Now available is a closed-flangeway concrete grade crossing which has been designed with every part immediately replaceable. All parts are seated on rubber, and conventional track spikes driven into vinyl-resin inserts firmly secure the rails to the reinforced-concrete longitudinal beams, it is said. Reinforced-concrete slabs and rubber filler blocks provide a continuous bump-free crossing surface. *Railroad Rubber Products, Inc.*

WATCHING **WASHINGTON** WITH WALTER TAFT

TAFT

LOCOMOTIVE INSPECTION REPORT RELEASED — The ICC's Section of Locomotive Inspection has issued its annual report for the fiscal year ending June 30, 1965—and figures show a rise in the number of locomotive defects over the previous year. Some 76,044 locomotives were checked by ICC inspectors, and 9,391, or 12.3% were found defective in various respects. Deficiencies ranged from brake equipment and other safety appliances that did not function properly, to parts found hanging loose from motor power units. All together, 646 units were ordered out of service until defects could be corrected—up 67 units from the total number of locomotives found deficient in the preceding year.

LOCOMOTIVE ACCIDENTS INCREASED—Locomotive-connected accidents were also tabulated in the report. The Commission's 50 locomotive inspectors investigated all 111 locomotive accidents, of which 87 were judged to be due to equipment failure. Total number of accidents was up 14.5% over the previous year, but fatalities were down. No employees were killed in locomotive accidents due to equipment failure in 1965, compared with one in 1964. There was a 3.1% decrease in the number of injuries: 93 persons were hurt in 1965, compared with 96 in the previous year.

Of the 87 accidents, 16 were caused by defective conditions of floors, steps, and passageways of diesel electric locomotives. This was a decrease of one accident, compared with the preceding year. Fifteen accidents were caused by the defective condition of cab seats, compared with 12 the previous year; nine accidents were caused by diesels engine crankcase explosions, the same as in the previous year.

THE ICC'S CASE-BACKLOG PROBLEM—While proceedings before the ICC have been moving at an accelerated rate in the past year, the number of cases before the Commission on Jan. 31, 1966 stood at 7,130—24% more than on the corresponding date a year ago. Last week, Commissioner Charles A. Webb had some thought's on how to speed things up:

"The best incentive for the Commission, in my judgment, is a tight statutory deadline." He pointed out that passenger train discontinuances must be disposed of within four months, and suggested that if Sections 15(7) and 216(g) of the Act were amended to provide a one-year cutoff of the ICC's jurisdiction in cases, decisions might be expedited. He believes that such a deadline would not affect the quality of the Commission's decisions, and would actually economically benefit the shippers and carriers involved. "I am inclined to believe," he added, "that we would find ways and means to meet such a deadline."

The Commissioner recently told a House Appropriations Subcommittee on Independent Offices that the ICC has "just about reached the saturation point of self-help, while the workload continues to increase enormously as the transportation industry volume keeps pace with the growth of the national economy." He added that any substantial reduction in the case backlog would required organizational reforms approved by the President or Congress.

AN INCOMPLETE STUDY OF FUEL SUPPLIES—The Department of the Interior is planning a study of the adequacy of domestic oil and natural gas supplies to meet the nation's needs in 1980. But overlooked in the rush to make the inventory is coal—a basic fossil fuel supply of industrial energy. The National Coal Policy Conference has been in touch with Interior Secretary Stewart Udall, and wants the study broadened to include coal reserves, because, says NCPC, "the production of gas and liquid fuels of all types from coal carries significant implications for the future of our fuel resources."

(Mr. Taft is on vacation. During his absence, this column is being written by other members of the staff.)

ANY SECTION
ANY TONNAGE
ANY ACCESSORY
GET RAIL FASTER from FOSTER

Ask for Foster's New Rail Catalog. A complete reference for ordering and maintaining industrial trackage.

For Rail, Pipe or Piling, call the Foster office near you.

L. B. FOSTER CO. Pittsburgh • Atlanta • Baltimore • Boston • Charlotte • Chicago • Cleveland • Columbus • Dearborn • Houston • Los Angeles • Lubbock • Memphis • Orlando Philadelphia • New York • St. Louis • St. Paul San Francisco • Seattle • Montreal • Windsor Hamilton • Winnipeg • Vancouver • Honolulu

Circle 13 on reader service card

Railroad association calendar

Based on available information, Railway Age has prepared the following list of railroad organizations giving names and addresses of secretaries and, where available, places and dates of next or regular meetings.

AIR BRAKE ASSOCIATION.—W. J. Jados, 3527 Wisconsin Ave., Berwyn, Ill. 60103. Sept. 12-14 Sherman House, Chicago.

American Association of Baggage Traffic Managers. W. B. Paul, Seaboard Air Line, Room 806, SAL Bldg., Richmond 13, Va. May 9-11, Statler Hilton Hotel, St. Louis.

American Association of Passenger Traffic Officers. R. G. Buckingham, P. O. Box 1167, Evanston, Ill. 60204. Oct. 2-5, Continental Plaza Hotel, Chicago.

American Association of Railroad Superintendents. Mrs. Ruth Weggeberg, 220 S. Michigan Ave., Chicago 60604. June 8-10, Pick-Congress Hotel, Chicago.

American Association of Railroad Ticket Agents. J. D. Florance, 147 W. Harrison St., Chicago 60605. Annual sales seminar, Oct. 10-11, Statler Hilton Hotel, St. Louis.

American Council of Railroad Women. Eileen C. Cannon, Louisville & Nashville, 220 E. 42nd St., New York, 10017. Oct. 21-23, Sheraton-Park Hotel, Washington, D.C.

American Railway Bridge and Building Association. Mrs. Ruth Weggeberg, 220 S. Michigan Ave., Chicago 60604. Sept. 26-28 Conrad Hilton Hotel, Chicago.

American Railway Development Association. T. T. Martin, Gulf, Mobile & Ohio, P.O. Box 881, Mobile, Ala., 36601. Mar. 28-29, The Greenbrier, White Sulphur Springs, W. Va.

American Railway Engineering Association. Works in cooperation with the Association of American Railroads. Engineering Division E. W. Hodgkins, Exec. Secretary, 59 E. Van Buren St., Chicago, 60605.

American Railway Magazine Editors Association. (See Association of Railroad Editors).

American Short Line Railroad Association. J. L. Collier, Jr., 2000 Massachusetts Ave., N.W., Washington, D.C., 20036. Sept. 26-28, Brown Palace Hotel, Denver.

American Society of Mechanical Engineers. O. B. Schier II, 345 E. 47th St., New York, 10017. Nov. 27-Dec. 1, Statler Hilton Hotel, New York.

Railroad Division. D. W. Odiorne, Edgewater Steel Co., 80 E. Jackson Blvd., Chicago 60604. Transportation Symposium with IEEE and ASCE, May 1-6, Jack Tar Hotel, San Francisco.

Associated Traffic Clubs. F. C. Day, 207 Pine St., Seaford, Del. Sept. 12-14, Jung Hotel, New Orleans.

Association of American Railroad Dining Car Officers. M. A. Ingram, Pennsylvania RR, Sunnyside Yards, Long Island City, N.Y. 11101. Oct. 11-13, Brown Palace Hotel, Denver.

Association of American Railroads. D. P. Loomis, Pres. R. E. Keefer, Secy.-Treas. and Adm. Asst. to Pres., Transportation Bldg., Washington, D.C. 20006.

Law Department. G. S. Prince, Exec. Vice-President and General Counsel, Transportation Bldg., Washington, D.C. 20006.

General Claims Division.—J. A. Risendal, Exec. Vice-Chairman, 59 E. Van Buren Street, Chicago, 60605. May 16-20, Biltmore Hotel, New York.

Operations and Maintenance Department. R. R. Manion, Vice President, Transportation Bldg., Washington, D.C. 20006.

Operating-Transportation Division. C. A. Lauby, Exec. Vice-Chairman, Transportation Bldg., Washington, D.C., 20006. W. E. Todd, Staff Secretary, 59 E. Van Buren St., Chicago, 60605.

Communication and Signal Section. George McCann, 59 E. Van Buren St., Chicago, 60605. Sept. 20-22, Sheraton-Park Hotel, Washington, D.C.

Safety Section.—W. E. Todd, Staff Secretary, 59 E. Van Buren St., Chicago, 60605.

Engineering Division. E. W. Hodgkins, Exec. Vice-Chairman, 59 E. Van Buren St., Chicago, 60605.

Mechanical Division. F. H. Stremmel, 59 E. Van Buren St., Chicago, 60605. June 28-30, Sherman House, Chicago.

Freight Claim Division. J. C. Hindman, 59 E. Van Buren St., Chicago, 60605. May 17-19, Cosmopolitan Hotel, Denver.

Data Systems Division. C. L. Byham, Exec. Dir., A. G. Hilley, Secy., Transportation Bldg., Washington, D.C., 20006. Oct. 17-19, Statler Hilton Hotel, Washington, D.C.

Finance and Accounting Department.—Wayne Irwin, Vice-President, Transportation Bldg., Washington, D.C. 20006.

Accounting Division. Philip A. Lyon, Transportation Bldg., Washington, D.C. 20006. May 30-June 1, Washington Hilton Hotel, Washington, D.C.

Treasury Division. Philip A. Lyon, Transportation Bldg., Washington, D.C., 20006. Sept. 4-7, The Greenbrier, White Sulphur Springs, W. Va.

Purchases and Stores Division. J. H. Bean, Exec. Vice-Chairman, 59 E. Van Buren St., Chicago, 60605.

Association of Interstate Commerce Commission Practitioners.—Mrs. C. M. Bridgeman, Exec. Secy., 1112 ICC Bldg., Washington, D.C., 20423. May 11-13, Palmer House, Chicago.

Association of Railroad Advertising Managers. J. D. Singer, Exec. Secy., Chesapeake & Ohio, Cleveland, Ohio, 44101. June 5-8, Brown Palace Hotel, Denver.

Association of Railroad Editors. Arthur Daitch, Railroad Retirement Board, 844 N. Rush St., Chicago, 60611. Sept. 14-16, Bellevue-Stratford Hotel, Philadelphia.

CANADIAN INDUSTRIAL TRAFFIC LEAGUE.—R. Eric Gracey, Gen. Mgr., 20 Bloor St., West, Toronto 5, Ont.

Canadian Railway Club. W. J. Cadogan, P.O. Box 162, Montreal 3, Que. Regular meetings, second Monday of each month except Feb., June, July, Aug. and Oct. Oct. meeting on first Monday, Queen Elizabeth Hotel, Montreal.

Car Department Association of St. Louis. H. D. Smith, 1101 Donnell Ave., St. Louis, 63137. Regular meetings, third Tuesday of each month except June, July and Aug. Fred Harvey's Restaurant, 2nd floor, Union Station, St. Louis.

Car Department Officers' Association. E. W. Gebhardt, 297 Highland Ave., Elmhurst, Ill., Sept. 12-14 Sherman House, Chicago.

Car Foreman's Association of Omaha, Council Bluffs and South Omaha Interchange. C. G. Poetzel, Chicago & North Western, 2111 Avenue L, Council Bluffs, Ia. 51503. Regular meetings, second Tuesday of each month except July and Aug., Chieftain Hotel, Council Bluffs.

Car Foremen's Association of Chicago. J. J. Sacheck, 1841 North Nagle Ave., Chicago, 60639. Regular meetings, second Monday of each month except June, July, Aug. and Oct., LaSalle Hotel, 7:00 P.M.

Central Railway Club of Buffalo. H. A. Lang, Exec. Secy., Room 17, Hotel Statler Hilton, Buffalo 2. Regular meetings, second Thursday of each month except June, July and Aug., Hotel Statler Hilton, 8:00 P.M.

Chicago Railroad Diesel Club. E. C. Fosdick, 225 Illinois Blvd., Hoffman Estates, Ill. 60173. Regular meetings first Monday of each month except July, Aug. and Sept., Hartford Bldg., 365 West Monroe St., 5:30 P.M.

Chicago Railroads' Car Accounting Officers. G. T. Anderson (Chairman) Chicago, Burlington & Quincy, 547 W. Jackson Blvd., Chicago 60606. Regular meetings, last Wednesday of each month except July and Aug., Traffic Club, Palmer House, 12 noon.

DETROIT MAINTENANCE OF WAY CLUB.—A. E. Johnson, Detroit, Toledo & Ironton, 13530 Michigan Ave., Dearborn, Mich. 48121. Regular meeting, first Monday of each month, Oct. through May, except Jan., League of Catholic Women Bldg., 120 Parsons St.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—T. F. Schaekel, Room 315, 15 No. 32nd St., Philadelphia, 19104. Nov. 10-11, The Greenbrier, White Sulphur Springs, W. Va.

Eastern Car Foreman's Association. C. H. Haunss, Central Railroad of New Jersey, Room 300, Jersey City Terminal, Jersey City, N.J. 07302. Regular meetings, third Tuesday of Jan., Feb., Mar., Apr., May, Oct. and Nov., Martinique Hotel, Broadway at 32nd St., New York.

GREAT LAKES RAILWAY CLUB.—W. F. Corbett, New York Central, 1324 W. Third St., Cleveland, 44113. Regular meetings, third Tuesday of each month except June, July and Aug., Pick-Carter Hotel. Dinner, 6:30 P.M.; meeting 7:30.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS.—Donald G. Fink, Gen. Mgr., 345 E. 47th St., New York 10017. Mar. 21-24, New York Hilton Hotel, New York. Exhibits at the Coliseum.

Committee on Land Transportation. J. L. Swarner, Pullman-Standard, 720 E. 111th St., Chicago, 60628. May 1-6, Jack Tar Hotel, San Francisco.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark. Sept. 12-14, Sherman House, Chicago.

MAINTENANCE OF WAY CLUB OF CHICAGO—J. S. Kopec, Chicago, Milwaukee, St. Paul & Pacific, Room 898, Union Station, Chicago, 60606. Regular meetings, Oct.-Apr., Midland Hotel.

Metropolitan Railway Club of New York.—Fred Osthoff, Railway Age, 30 Church St., New York, 10007. Next meeting in April, Prince George Hotel, 28th St., & Madison Ave., New York. Annual picnic in June.

Military Railway Service Veterans.—R. E. Godley, 102 Mimosa Dr., Pass Christian, Miss. 39571. Sept. 23-25, Pittsburgh Hilton Hotel, Pittsburgh.

Mississippi Valley Maintenance of Way Club. W. H. Stumm, Gulf Mobile & Ohio, P.O. Box 17, Bloomington, Ill. Regular meetings, second Monday of each month, Sept. through May, Louis IX Room, Fred Harvey's Restaurant, Union Station, St. Louis.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—R. E. Kreeger, 5310 ICC Bldg., P.O. Box 684, Washington 4, D.C.

National Association of Railroad Trial Counsel. J. J. McCarthy, Exec. Dir., Room 1503, 55 Liberty St., New York, 10005. Aug. 21-24, The Greenbrier, White Sulphur Springs, W. Va.

National Association of Railway Tax Commissioners.—L. B. Norberg, Chicago, Milwaukee, St. Paul & Pacific, Union Station, Room 836, Chicago.

National Association of Shippers' Advisory Boards. L. K. Mathews, Portland Cement Co., 7751 Carondelet Ave., St. Louis, Mo. Oct. 17-19, Pittsburgh Hilton Hotel, Pittsburgh.

National Defense Transportation Association. Lily M. Beauchamp, 1612 K St., N.W., Washington, D.C., 20006. Sept. 18-21, Statler Hilton Hotel, Dallas.

National Industrial Traffic League. J. L. Dorr, Exec. Secy., Suite 909, 711 14th St., N.W., Washington, D.C. 20005. Nov. 17-18, Sheraton-Chicago Hotel, Chicago.

National Railroad Lubrication Council. A. G. Swasey, Ashland Oil & Refining Co., 1401 Winchester Ave., Ashland, Ky. May 5, Penn-Sheraton Hotel, Pittsburgh.

National Railroad Piggyback Association. P. W. Johnston, Jr., Erie-Lackawanna, Midland Bldg., Cleveland, 44115.

New England Railroad Club. William M. McCombs, P. O. Box 145, Pembroke, Mass. 02359. Regular meetings, second Tuesday in Feb., April, Oct. and Dec., Hotel Vendome, Boston. Dinner 6:30.

New York Railroad Club. F. R. McCarthy, Exec. Secy., 366 Lexington Ave., New York, 10017. Meetings, Apt. 21, Oct. 20, Grand Ballroom, Hotel Commodore, New York. Reception, 5:30 P.M.; dinner, 6:30; meeting, 7:45. Annual meeting and dinner, Dec. 1, Grand Ballroom, Hotel Commodore.

Northwest Carmen's Association. N. J. Maglich, Minnesota Transfer Ry., 508 N. Cleveland Ave., St. Paul 14. Regular meetings, first Monday of each month except June, July and Aug., Y.M.C.A., Midway Branch, 1761 University Ave., St. Paul.

Northwest Maintenance of Way Club. F. L. Roland, 27 Milwaukee Station, Minneapolis 1. Regular meetings, fourth Thursday of each month, Oct. through Apr., except Nov. and Dec., which are third Thursday, Prom Center-Arizona Room, 1190 University Ave., St. Paul. Social hour, 5:30 P.M.; dinner, 6:30.

PACIFIC RAILWAY CLUB.—K. N. MacGregor, Southern Pacific, 65 Market St., San Francisco, 94105. Meetings in alternate months in San Francisco and Los Angeles. One meeting a year at Sacramento and at Roseville.

RAILROAD INSURANCE MANAGEMENT ASSOCIATION.—W. C. Kaiser, Missouri Pacific, Missouri Pacific Bldg., St. Louis 63103.

Railroad Joint Facility Club of Chicago.—J. R. Zona, Chicago & Eastern Illinois, 646 Chicago Road, Chicago Heights, Ill. 60411. Regular meetings first Monday of each month except July, Aug. and Sept. Traffic Club, Palmer House, Chicago. 12 noon.

Railroad Personnel Association. M. H. Bradway (President) Baltimore & Ohio, 2 N. Charles St., Baltimore, 21201.

Railroad Public Relations Association. J. N. Ragsdale, Association of American Railroads, Transportation Bldg., Washington, D.C., 20006. June 26-29, Tides Inn, Irvington, Va.

Railway Club of Pittsburgh. G. F. Morrison, 2710 Koppers Bldg., Pittsburgh 15219. Regular meetings, third Thursday of each month except June, July, Aug., Sept. and Dec., Penn-Sheraton Hotel, Dinner, 6:30 P.M.; meeting 7:30.

Railway Engineering-Maintenance Suppliers' Association. W. J. Joy, Exc. Secy., 332 S. Michigan Ave., Chicago 60604.

Railway Fuel and Operating Officers' Association. L. H. Peters, 10414 S. Wood St., Chicago, 60643. Sept. 12-14, Sherman House, Chicago.

Railway Progress Institute. N. A. Lennartson, Pres., First National Bank Bldg., Chicago, 60603. Nov. 17, Waldorf-Astoria, New York.

Railway Signal and Communications Suppliers' Association. W. H. Allen, 165 Broadway, New York 10006.

Railway Systems and Management Association. G. C. Vietsch, Exec. Dir., 163 E. Walton St., Chicago, 60611.

Railway Tie Association. R. M. Hamilton, 1373 Grandview Ave., Columbus, Ohio, 43212. Oct. 19-21, Chase-Park Plaza Hotel, St. Louis.

Roadmasters and Maintenance of Way Association. Mrs. Ruth Weggeberg, 220 S. Michigan Ave., Chicago, 60604. Sept. 26-28, Conrad Hilton Hotel, Chicago.

Rochester Railroad Association. H. K. Blaeser, 1247 Genesee Park Blvd., Rochester, N.Y. Regular meetings, third Thursday, Sept. through May, Liederkrantz Club, 660 Main St., West.

ST. LOUIS RAILROAD DIESEL CLUB—F. C. Whitlock, 6207 W. Washington, Belleville, Ill., 62223. Regular meetings, first Monday in Jan., Mar., May and Nov., Tuesday after Labor Day in Sept., Fred Harvey's King Louis IX Room, Union Station, St. Louis. Dinner, 7 P.M.; meeting, 8.

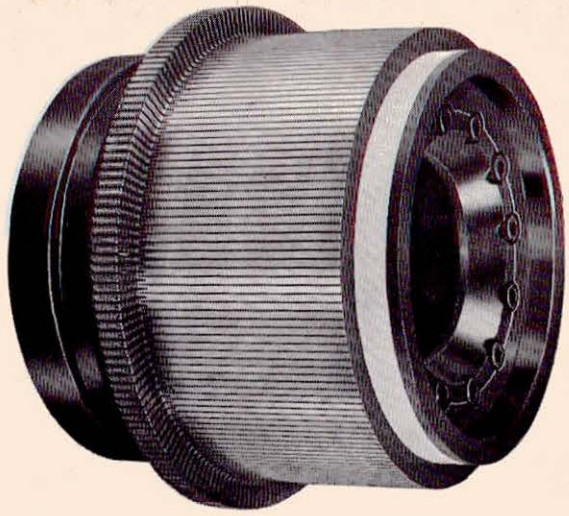
Southern & Southwestern Railway Club. H. W. Brewer, P.O. Box 7211, Jacksonville, Fla. 32210. Regular meetings, third Thursday, in Jan., Apr., June and Oct.

Southern Association of Car Service Officers. F. I. Umhau, 1796 Meadowside Ave., N.E., Atlanta, 30306.

TORONTO RAILWAY CLUB.—W. F. Saunders, P.O. Box 8, Terminal "A", Toronto 1, Ont. Regular meetings, fourth Monday of each month except Feb., June, July, Aug., Royal York Hotel. Annual dinner, first Saturday in December.

Western Railway Club. Suite 339, Sherman House, Chicago 60601. Regular meetings in Feb., Mar., Apr., May, Oct., Nov., and Dec. (Ladies' Night).

This remanufactured General Electric commutator meets the same quality standards as a new one...we guarantee it.



Why shouldn't we? It's built exactly like a new one.

First, every commutator is completely disassembled. Steel parts are factory inspected and reconditioned to meet latest engineering specifications. Then they enter the factory commutator manufacturing line for new, high-quality copper and mica. Commutator specialists conduct rigid tests through the vital seasoning and spinning cycles. And stringent voltage quality control tests must be met before the commutator is ready for shipment.

The result . . . a remanufactured commutator with all the up-to-date specifications and performance capability of a new one, but at a lower cost.

To learn even more reasons why factory exchange or repair-return commutator service can save you money, call your G-E Renewal Parts Sales and Application Engineer: Atlanta 876-2451 (404); Chicago 663-4141 (312); Cleveland 361-4464 (216); Erie 455-5466 (814); New York 751-1311 (212); Philadelphia 568-1800 (215); Pittsburgh 281-6400 (412); San Francisco 434-2211 (415); or St. Louis 436-4343 (314). 121-23

GENERAL ELECTRIC

Circle 14 on reader service card

KINNEAR
ROLLING DOORS

The installation shown here* is another example of the nation's transportation and industrial leaders who, for the past 70 years, have insured maximum doorway economy for their shops, docks or factory buildings by installing Kinnear Rolling Doors. Designed to withstand minimum wind velocities of 88 m.p.h. (more when specified) and having curtains composed of heavily galvanized steel slats, Kinnear Doors provide maximum protection and durability. Other features also available where extra weather tightness is desired. And by coiling above the opening Kinnear Doors not only save floor and wall space, but also are especially suited to the extra efficiency of electric power operation with a choice of control arrangement.

Also manufacturers of Door Operators, Rolling Fire Doors, Rolling Grilles, Rolling Counter Shutters and RoL-TOP Overhead Type Doors.

The KINNEAR Manufacturing Company and Subsidiaries
2021-40 Fields Avenue, Columbus, Ohio 43216
FACTORIES: Columbus, Ohio 43216 — San Francisco, Calif. 94124 — Toronto, Ont., Canada

KINNEAR®
Saving Ways in Doorways
SINCE 1895

Offices and representatives in all principal cities—listed in Yellow Pages under "Doors." Also see Sweet's.

*AMF Beaird, Inc., Shreveport, La., Subsidiary of American Machine & Foundry Co.

Circle 15 on reader service card

Edward T. Hurley
CN

Clifford G. Massoth
IC

PEOPLE

ASSOCIATION OF AMERICAN RAILROADS.—**Robert A. Petrash,** manager of terminal reporting analysis, **New York Central,** New York, named assistant executive director, Data Systems Division, AAR, Washington, D.C.

BALTIMORE & OHIO.—**Jon M. Clark,** regional sales manager—foreign traffic, New York, appointed sales manager, Pittsburgh, succeeding **Murray A. Campbell,** transferred to Baltimore. **Frank L. Skinner, Jr.,** district sales manager, New York, succeeds Mr. Clark.

Thomas L. Samuel, attorney, named assistant general attorney, Baltimore.

BANGOR & AROOSTOOK.—**Herschel P. Lee,** assistant superintendent of transportation, Houlton, Me., promoted to superintendent of transportation there, succeeding **D. Keith Lilley,** retired. **Robert P. Groves,** assistant chief dispatcher, named assistant superintendent transportation.

BESSEMER & LAKE ERIE.—**Robert B. Wooters** appointed manager marketing—coal and ore, Pittsburgh, Pa. Mr. Wooters was formerly in the operating and traffic departments, **Western Maryland,** and recently served as president, Bird Coal Co., Johnstown, Pa.

CANADIAN NATIONAL.—**Edward T. Hurley,** assistant vice president—purchases and stores, Montreal, Que., appointed vice president—purchases and stores, succeeding **E. A. Bromley,** retired.

Earl H. R. Eastwood, passenger sales manager, Great Lakes Region, Toronto, appointed European general manager, London, England, effective July 1, succeeding **Joseph C. Kenkel,** retiring.

A. G. McIntyre, engineering maintenance of way, Mountain Region, appointed assistant engineer, location and construction, on new branch line construction, Edmonton, Alta. **L. O. Hostland,** special projects engineer, Prairie Region, appointed project engineer—grading, on new branch line construction, Winnipeg, Man. **D. Alcock,** assistant area engineer—maintenance, Montreal Area, promoted to training and special projects officer, St. Lawrence Region, Montreal, succeeding **A. Des Trois Maisons,** retired.

R. J. Wilson, senior agreements analyst, Personnel and Labor Relations Department, Montreal, appointed associate labor relations officer, Great Lakes Region, Toronto, and will succeed **J. R. Mansfield,** labor relations officer, on his retirement.

R. W. Bowman, system supervisor claims prevention and weighing, Montreal, appointed assistant to chief of transportation.

Announcing the...

1966 RAILWAY PASSENGER STUDY TOUR OF EUROPE

sponsored by

RAILWAY AGE

visiting

- SWITZERLAND
- ITALY
- FRANCE
- HOLLAND
- GERMANY

DEPARTURE: New York
Tuesday, September 6, 1966

RETURN: leave Berne
Tuesday, September 20, 1966

Ride the famous high-speed name trains of the Continent: "TEE Lemano", "TEE Le Mistral", "TEE L'Oiseau Bleu", "TEE Rhein-Main", "Rheingold TEE" (vista-dome) and others.

for further information & complete itinerary write

Luther S. Miller

Railway Age

30 CHURCH STREET
NEW YORK, N. Y. 10007

William D. Sunter
Milwaukee

George H. Kronberg
Milwaukee

Samuel W. Amour
Milwaukee

E. J. Stoll
Milwaukee

B. Williams, transportation assistant, St. Lawrence Region, Montreal, appointed superintendent, Toronto Yard, succeeding **R. C. Field,** named system rules supervisor, replacing **R. B. Ferrier,** promoted.

Walter R. Mitchell, operations manager, Maritime Area, promoted to manager, Northern Ontario Area, Capreol, Ont.

CENTRAL OF GEORGIA.—L. J. Hamilton, general agent, New York, promoted to eastern traffic agent there, succeeding **J. A. Dowling,** retired. **B. R. Pollock** succeeds Mr. Hamilton.

FRISCO.—L. S. Newman, architect, named general architect, Springfield, Mo., to replace **O. H. Tucker,** who retired March 1 after more than 22 years of service.

GREAT NORTHERN.—J. J. Boettner named assistant general superintendent transportation-freight equipment, St. Paul.

ILLINOIS CENTRAL.—Clifford G. Massoth, public relations officer, Chicago, named director of public relations, succeeding **George M. Crowson,** assistant to the president, retired (RA, Feb. 28, p. 8). **Stewart J. Cox** named assistant auditor of research.

KANSAS CITY SOUTHERN.—W. D. Montgomery named tie and timber agent, Winnfield, La., succeeding **O. P. Sherrod,** who retired Mar. 1 after more than 46 years of service.

MILWAUKEE.—William D. Sunter, assistant vice president-traffic, elected vice president-rates and divisions. **George H. Kronberg,** director of public relations and advertising, elected vice president-sales and service. **Walter W. Kremer,** traffic vice president, retired, but will continue with the company in a consulting capacity.

Samuel W. Amour, director of labor relations and assistant to the vice president-operations, elected vice president-labor relations.

E. J. Stoll, director, real estate and industrial development, elected vice president-real estate and industrial development.

(Continued on page 38)

Circle 16 on reader service card

4.5 Volt Power Supply Designed Especially For Message Circuit Dialing Waystation Equipment

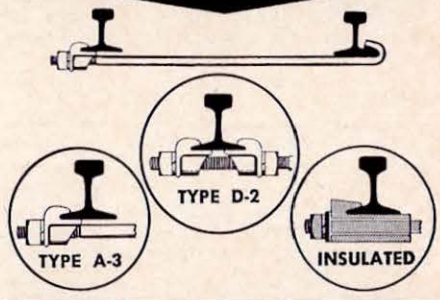
The MCD 4.5 POWER SUPPLY WILL POWER AS MANY AS TEN TELEPHONE SETS AND TWO SELECTOR RECEIVERS

SPECIFICATIONS

- INPUT—105 to 125V, 60 cps
- OUTPUT—Adjustable 3 to 7V DC
- CURRENT—1.5A Intermittent .4A Continuous
- REGULATIONS—.2 Volts 0 to 1 Amp
- RIPPLE—Less than 5MV at 100MA
- CONNECTIONS included for a 4½ standby dry battery
- SIZE—5¼" x 3" x 2⅛"

GARDNER
ENGINEERING SERVICE
2055 Turk Hill Road
Fairport, New York 14450

Specialists in
TRACK SAFETY



DURABLE GUAGE RODS

Designed for installation at weak points in track. Prevents spreading of rails by holding track to gauge. Eliminates respiking and prevents tilting of rails. Rods 1¼" diam. High grade malleable jaws with excellent corrosive resistance.

DURABLE RODS available with a "Polyvinyl" Chloride insulation, highly resistant to atmospheric corrosion and combustion.

Railway Trackwork for every need
SEND FOR OUR RAIL and TRACKWORK CATALOG

MIDWEST STEEL CORP.

510 CAPITOL STREET, CHARLESTON, W. VA.
RAILWAY EXCHANGE BLDG., ST. LOUIS, MO.
EAST MAIN STREET, POMEROY, OHIO
Circle 17 on reader service card

James T. Hunter
M-K-T

John H. Hughes
M-K-T

Billy A. Miller
M-K-T

Thomas E. Malloy
River Terminal

Norbert F. Mullaney
A. O. Smith

Paul F. Gutmann, Jr.
Scullen Steel

MISSOURI-KANSAS-TEXAS. — **James T. Hunter,** division engineer, Waco, Tex., appointed chief engineer, Denison, Tex., to succeed the late **L. R. Deavers.** Mr. Hunter's successor is **Juil E. Clark,** assistant division engineer, Waco. **John H. Hughes,** division engineer, Parsons, Kans., named to the newly created position of engineer maintenance of way, Denison. **Buford S. Macom,** assistant division engineer, Parsons, replaces Mr. Hughes. **Billy A. Miller,** coordinator of services and equipment, Denison, appointed superintendent of transportation there. Positions of assistant division engineer at Parsons and Waco abolished.

MISSOURI PACIFIC-TEXAS & PACIFIC.—**J. W. Jackson** named trainmaster, Kansas City Terminal division, Kansas City, Mo., succeeding **R. Turner,** transferred to the Little Rock Terminal division, North Little Rock, Ark.

D. J. Bertel, assistant district engineer, Gulf district, Houston, named district engineer, Texas district, Fort Worth, Tex., to succeed **R. C. Caldwell,** resigned. **C. L. McFadin** replaces Mr. Bertel.

J. K. Wesley, general land agent, Engineering Department, St. Louis, advanced to assistant director of industrial development there. **P. P. Wagner, Jr.** named assistant manager of land, St. Louis, to replace Mr. Wesley.

PENNSYLVANIA.—**William L. Thigpen,** assistant regional mechanical officer, Chicago, appointed regional mechanical officer, Western Region, to succeed **Richard C. Ambelang,** advanced to superintendent, Northern division, Buffalo, N.Y.

RAILWAY PROGRESS INSTITUTE.—**William F. Lewis,** chairman and president, **Alco Products, Inc.,** New York, elected to the RPI Board of Governors and to the Executive Committee. He succeeds **William G. Miller,** who resigned when he accepted new responsibilities as chaiman, **Worthington International, Inc.**

Robert G. Lewis, vice president-operations and director, **Simmons-Boardman Publishing Corp.,** appointed to the RPI Board of Governors, succeeding the late **James G. Lyne,** chairman of the board of Simmons-Boardman and editor of **Railway Age.** Mr. Lewis is also publisher of Railway Age and managing director of **International Railway Journal.**

RIVER TERMINAL.—**Thomas E. Malloy,** assistant general manager, promoted to general manager, Cleveland, succeeding **R. N. Wilson,** retired after 49 years service.

SOUTHERN PACIFIC.—**Robert J. Surginer** named manager, Data Processing Department, Houston. **S. A. Findley,** terminal trainmaster, Corsicana, Tex., retired Feb. 28 after more than 42 years' service.

Supply Trade

C. R. Radey has been appointed assistant to the vice president, research and engineering, **Pullman-Standard** division of **Pullman Incorporated. Dr. William P. Manos,** special assistant in research and engineering, succeeds Mr. Radey as general manager, freight engineering, with headquarters at the Michigan City, Ind., plant.

Ralph H. Bogle, Jr., vice president, **R. H. Bogle Co.,** Alexandria, Va., has been appointed president, succeeding **R. H. Bogle, Sr.,** who has been named chairman of the board of directors. **John B. Bogle,** secretary, has been appointed vice president and secretary and **H. M. Bogle,** named treasurer.

Norbert F. Mullaney, manager of rail and advance products, Automotive division, **A. O. Smith Corp.,** has been named general manager of the newly formed Railroad Products division, Milwaukee, Wis. The new division is a part of the Contract Products group which is headed by **John R. Parker,** group vice president. The **Apex Railway Products Co.** of Chicago continues as exclusive sales agency for A. O. Smith railroad products. **Harold E. Vickerman,** former assistant to Mr. Mullaney, has been named director of engineering and quality, Railroad Products division. **Alan A. Floyd,** sales manager for new business development, Automotive division, has been appointed director of marketing for the new division.

Paul F. Gutmann, Jr., chief mechanical engineer, **Scullin Steel Co. Division** of **Universal Marion Corp.,** has been appointed vice president-engineering.

O. J. Sopranos, business research analyst, **AMSTED Industries,** has been appointed director of business research, Chicago.

OBITUARY

W. S. Hackworth, 70, who resigned in 1956 as president, **Nashville, Chattanooga & St. Louis** (later merged with the Louisville & Nashville), died Jan. 20 in Nashville, Tenn.

Frank J. Newell, 72, retired director of publicity, **Milwaukee,** died March 2 at St. Paul, Minn.

Albert T. Pierson, 73, special representative and chief lobbyist for the **New Haven** until his retirement in 1958, died Feb. 28 at his home in West Haven, Conn., after a brief illness.

Carl J. Schmidt, 62, general agent, **Alton & Southern,** died Feb. 18.

YOUR COPY IS READY!

Brand new Rust-Oleum "Maintenance Guide For The Railroad Industry." Includes application data, surface preparation, color standards, etc. for rolling stock, bridges, tanks, towers, signalling and communications equipment. A modern guide to help you achieve the lowest cost per square foot per year of protection with Rust-Oleum long life! Write for your free copy or ask your Rust-Oleum Railroad Specialist!

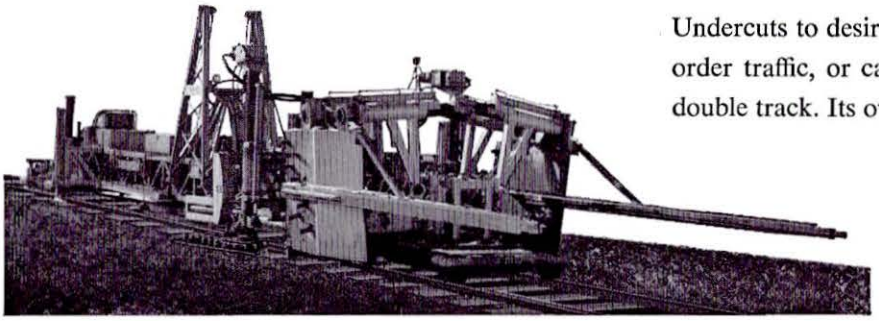
RUST-OLEUM®

STOPS RUST!®

Rust-Oleum Corporation— 2527 W. Oakton St., Evanston, Illinois
Circle 18 on reader service card

. . . remove ALL ballast, undercut to desired depth, remove and eject ties, hold alignment and cross level with a few men and the . . .

NEW MANNIX UNDERCUTTER

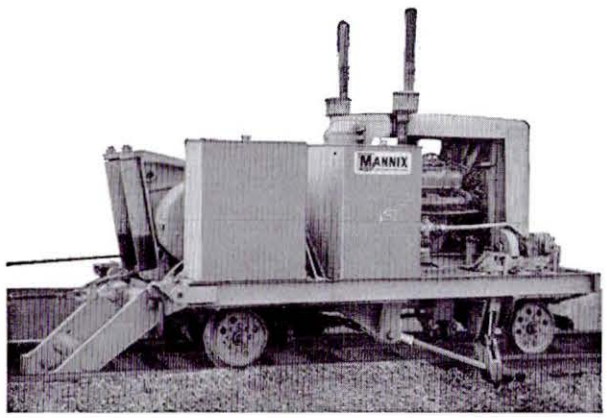


Undercuts to desired depth and leaves track ready for slow order traffic, or can be used as plow or sled on single or double track. Its own power drives it to and from work and provides hydraulic power to jack up track, insert and remove undertrack equipment, remove undercut material or waste, knock off and eject ties, control cross level and depth of cut and align track.

When plowing removes ALL old ballast without disturbing sub-ballast. More footage is produced with fewer men and better results than with ordinary methods and equipment.

MANNIX WINCH CART

Reduce work train costs by using a powerful MANNIX Winch Cart to pull the MANNIX Undercutter, Autosled or Autotrack. Work speed variable to 230 fpm., travel to 25 mph., pulls up to 70,000 lbs. on single line. Also economical for other jobs requiring a powerful winch.



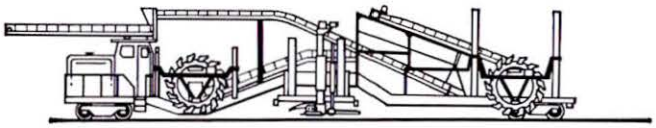
Finish Your M/W Programs Faster, Stretch Budgets Farther with MANNIX M/W Equipment and Methods

AUTOSLED

Sleds ballast, removes ties and aligns track with 4 man crew. Hydraulic power jacks up track and inserts or removes built-in sled, removes ties, aligns track. Ideal for yards, branch lines, areas where undertrack equipment must be inserted and removed frequently.

AUTOTRACK

Plow or sled, remove ties and align track for slow order traffic with one pass of the MANNIX Autotrack. A few men will work more feet of track with more uniform results than a large crew using old equipment and methods.



UNDERCUTTER-CLEANER

ONE PASS of this amazing, self-powered machine does all of these things with a minimum crew and no work train. Cleaned ballast is returned to track in three areas: between rails, to either side, or all three. Waste material can be loaded directly into gondolas or cast to either side of track or tracks. Follow-up equipment can work immediately behind machine. Traffic can pass on adjacent track. Rehabilitates and returns track to service faster than any other equipment.

MANNIX
INTERNATIONAL, INC.

9714 10TH AVE. NO.
MINNEAPOLIS, MINNESOTA 55427
Area 612, 545-0411

. . . for full details of contract, rental or purchase of MANNIX Equipment or to arrange a showing of operating films at no obligation, write, wire or phone . . . . . .

Circle 19 on reader service card

CF&I Structurals, Bars and Shapes–for building and repairing railroad cars, and many essential steel structures.

CF&I Service in Steel . . . cooperation for innovation

D-425

For durable concrete bridges, ties and buildings - CF&I-Roebling Prestressing Wire and Strand.

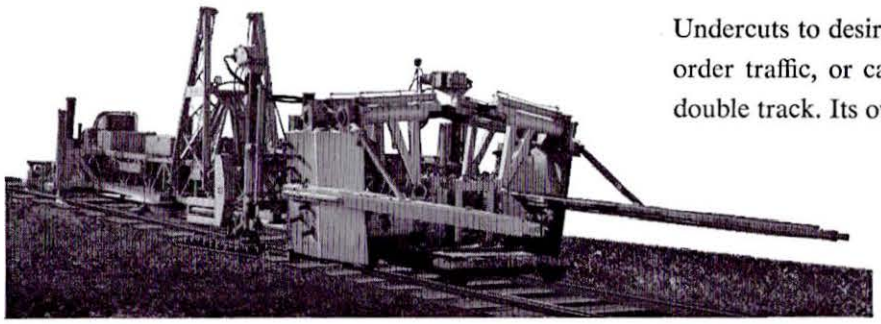
Extra tough wire rope to lift heavy loads time and again – Double Gray®-X.

In cooperation with Western railroads, CF&I pioneered new standards in rails and accessories – innovations for modern, high-speed railroading. CF&I's broad range of products, described opposite, and technical assistance for new rapid transit systems support today's progressive railroad industry – part of CF&I Service in Steel.

CF&I STEEL

. . . remove ALL ballast, undercut to desired depth, remove and eject ties, hold alignment and cross level with a few men and the . . .

NEW MANNIX UNDERCUTTER

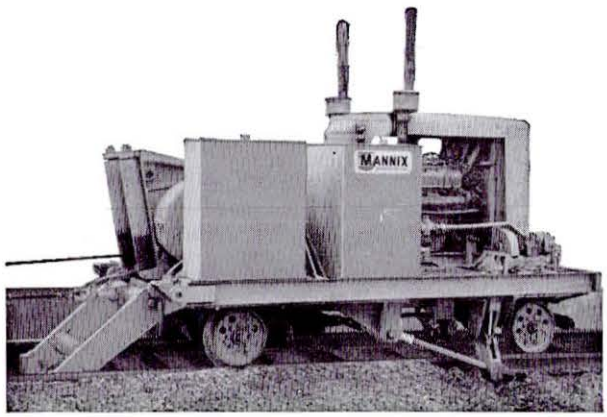


Undercuts to desired depth and leaves track ready for slow order traffic, or can be used as plow or sled on single or double track. Its own power drives it to and from work and provides hydraulic power to jack up track, insert and remove undertrack equipment, remove undercut material or waste, knock off and eject ties, control cross level and depth of cut and align track.

When plowing removes ALL old ballast without disturbing sub-ballast. More footage is produced with fewer men and better results than with ordinary methods and equipment.

MANNIX WINCH CART

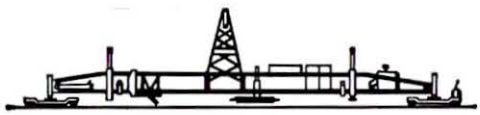
Reduce work train costs by using a powerful MANNIX Winch Cart to pull the MANNIX Undercutter, Autosled or Autotrack. Work speed variable to 230 fpm., travel to 25 mph., pulls up to 70,000 lbs. on single line. Also economical for other jobs requiring a powerful winch.



Finish Your M/W Programs Faster, Stretch Budgets Farther with MANNIX M/W Equipment and Methods

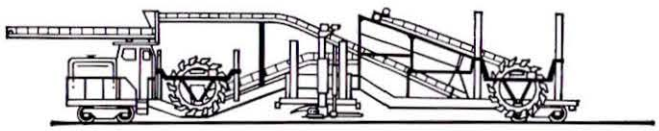
AUTOSLED

Sleds ballast, removes ties and aligns track with 4 man crew. Hydraulic power jacks up track and inserts or removes built-in sled, removes ties, aligns track. Ideal for yards, branch lines, areas where undertrack equipment must be inserted and removed frequently.



AUTOTRACK

Plow or sled, remove ties and align track for slow order traffic with one pass of the MANNIX Autotrack. A few men will work more feet of track with more uniform results than a large crew using old equipment and methods.



UNDERCUTTER-CLEANER

ONE PASS of this amazing, self-powered machine does all of these things with a minimum crew and no work train. Cleaned ballast is returned to track in three areas: between rails, to either side, or all three. Waste material can be loaded directly into gondolas or cast to either side of track or tracks. Follow-up equipment can work immediately behind machine. Traffic can pass on adjacent track. Rehabilitates and returns track to service faster than any other equipment.

MANNIX
INTERNATIONAL, INC.

9714 10TH AVE. NO.
MINNEAPOLIS, MINNESOTA 55427
Area 612, 545-0411

. . . for full details of contract, rental or purchase of MANNIX Equipment or to arrange a showing of operating films at no obligation, write, wire or phone . . . . . .

Circle 19 on reader service card

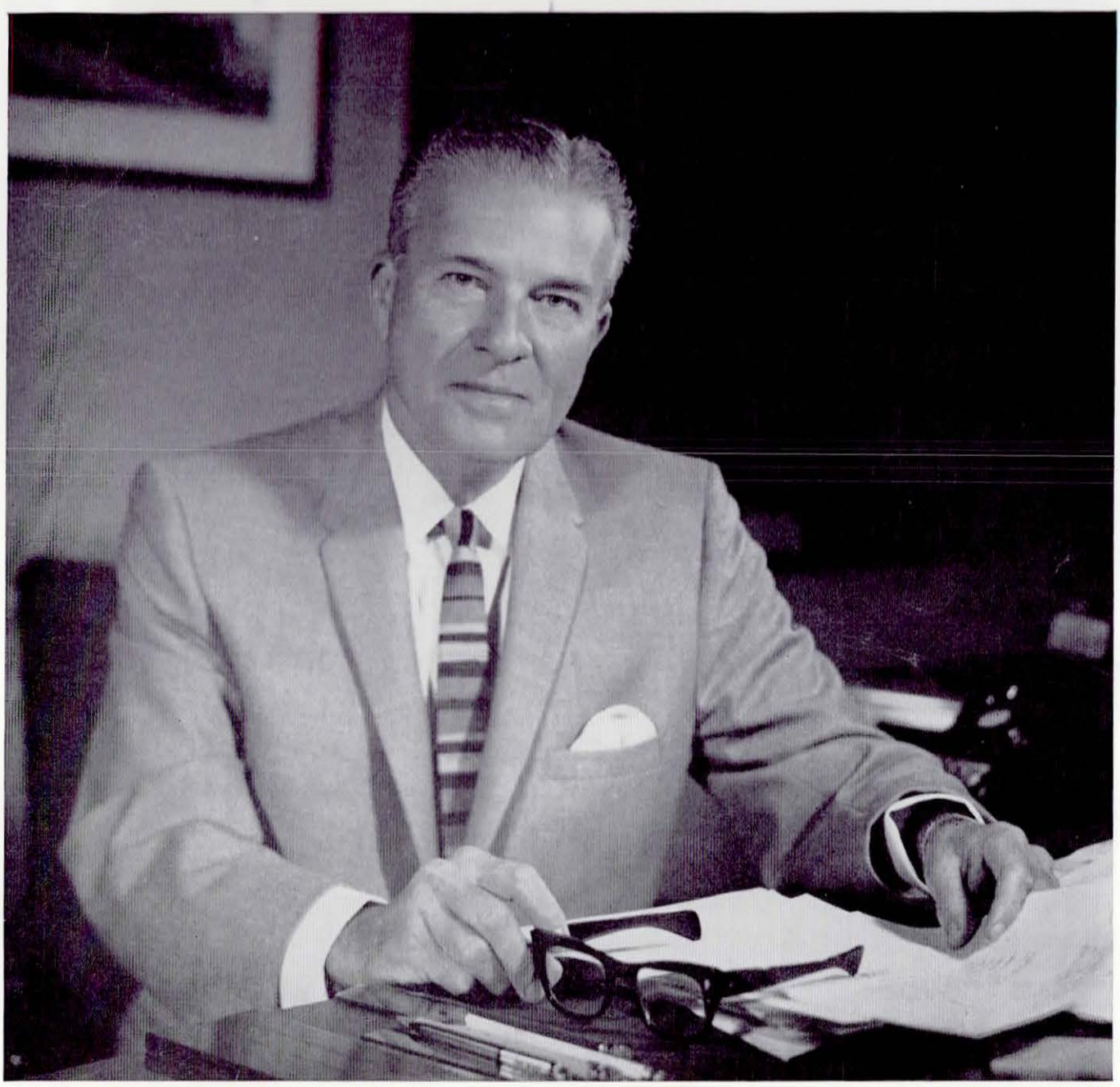


Photo: Moffett Studio

WILLIAM C. COLEMAN, *Chairman of the Board and President*
Monon Railroad

"Railway Age is a modern factual publication with widespread appeal. Railroads are kept informed as to new methods and useful products through advertising. Subscribers find interesting news which is up to the minute. Our people look forward to each issue."

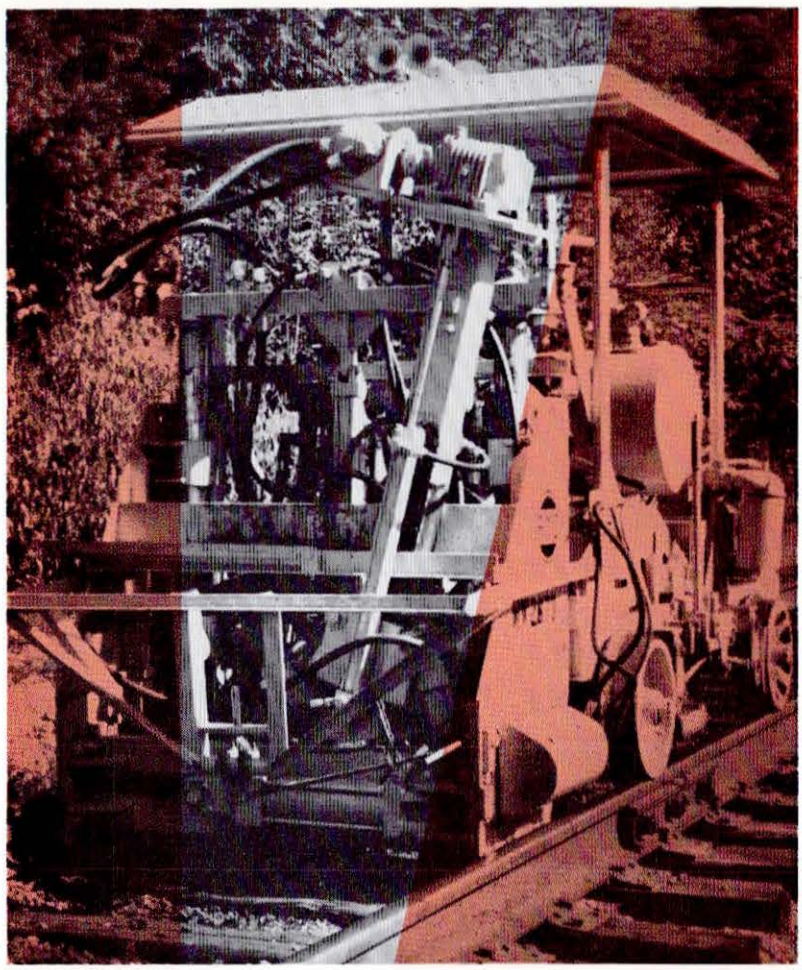
W. C. Coleman

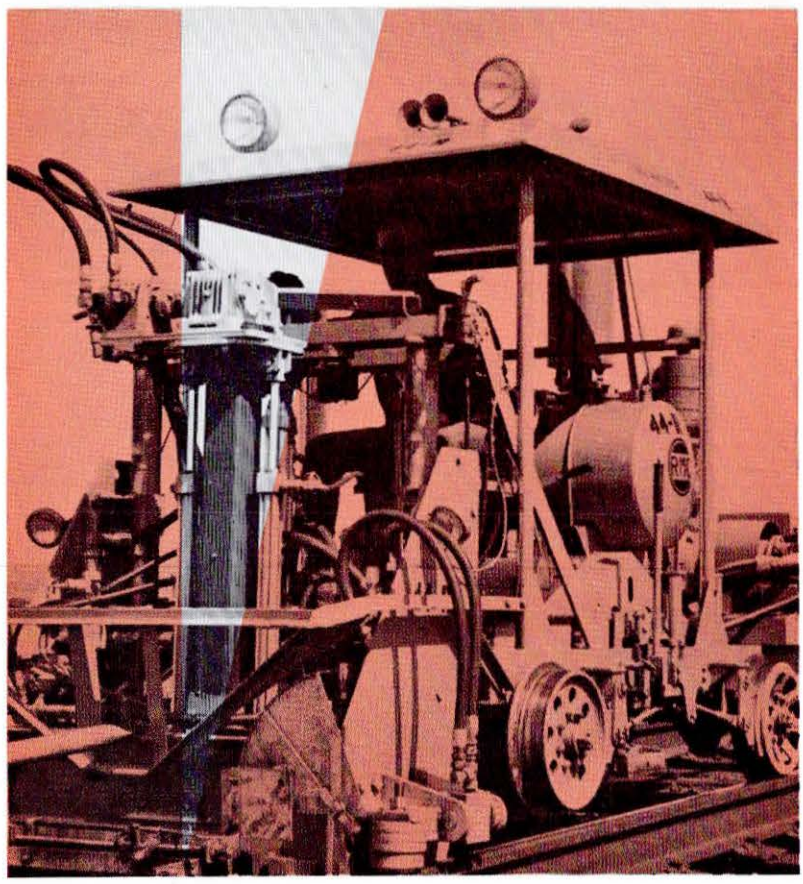
TILTING SPUD

This SQUARE lines without lifting!

LineMaster always slides track smoothly, never "humps" it! The square anchoring spud is the basic reason. To start the lining sequence, the spud anchors itself firmly in the crib, then tilts in the direction of the move—forming a rigid basis against which hydraulic pressures can be applied. Action is fast; lining shoes always are within ½" of the rails. An optional oscillating device permits vibrating lining shoes, for use in severe ballast conditions.

Now two models—High-Production (12" lining cylinders) and Standard-Production (8" cylinders)
■ Box 1888, Pittsburgh, Pa. 15230.





RMC

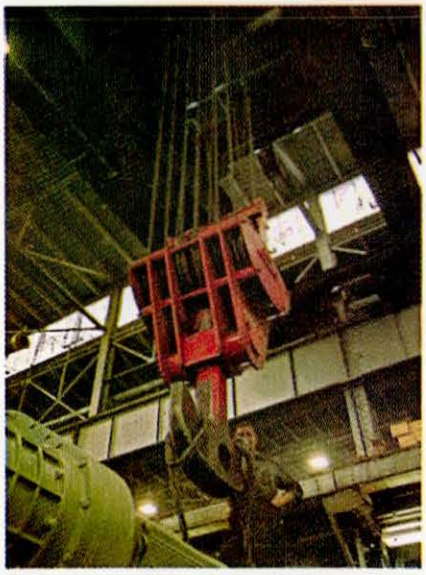
Railway Maintenance Corporation

Circle 20 on reader service card

CF&I Structurals, Bars and Shapes–for building and repairing railroad cars, and many essential steel structures.

CF&I Service in Steel . . . cooperation for innovation

For durable concrete bridges, ties and buildings - CF&I-Roebling Prestressing Wire and Strand.



Extra tough wire rope to lift heavy loads time and again – Double Gray®-X.

In cooperation with Western railroads, CF&I pioneered new standards in rails and accessories – innovations for modern, high-speed railroading. CF&I's broad range of products, described opposite, and technical assistance for new rapid transit systems support today's progressive railroad industry – part of CF&I Service in Steel.

CF&I STEEL

R. G. LEWIS

AS THE PUBLISHER SEES IT...

TRANSIT CAN BE BEAUTIFUL—President Johnson, in a letter to Walter McCarter, Administrator of the National Capital Transportation Agency (written, appropriately, on Washington's Birthday) urges that WM "search worldwide for concepts and ideas that can be used to make this system attractive as well as useful . . . so as to set an example for the nation." Beautification of the highway system, LBJ points out, is a major consideration embraced in recent federal legislation. There would seem to be every reason to believe that people on the subways would have aesthetic sensitivities to the same degree as people on the highways. With few exceptions, though, they have had little exposure to anything but drab surroundings. Even where new cars are in service, stations often remain shabby and poorly lighted.

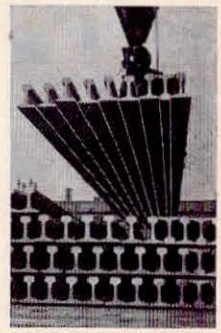
Europeans are probably ahead of us on this score—and the Japanese, too. I have personally been on subway lines in most cities east and west of Moscow, inclusive, and would vote Stockholm as one of the best designed from the point of eye appeal (and utility, too.) Participants in Railway Age's Transit-Seminar-Tour this summer will get a chance to see for themselves. The tour (which leaves New York July 18 and returns Aug. 2) will include London, Stockholm, Moscow, Berlin, Milan and Paris. For those interested, our executive editor, Luther Miller, has additional information.

NEW PREFIX FOR PRESIDENT—John Barriger, president of the MKT, is capitalizing on his reputation as a freight salesman. In a recent brochure promoting Katy's connections (89 junction points with 36 railroads) JWB is pictured along with Katy's sales executives; the caption under his photo: "John W. Barriger, Traveling Freight Agent . . . and President."

ZERO DEFECTS ON THE RAILROADS—The Long Island has adopted the personal motivation plan known as "Zero Defects." Some time ago we reported that Vapor Corp. was using the plan (RA, Oct. 4, 1965, p. 36), but so far as I know the LI is the first railroad to strive for maintenance perfection through the plan. Jack Brannan, chief mechanical officer, called this to my attention. He says, "We are trying to make our employees feel as though they are building a cathedral, instead of just laying stones in a wall," by making them realize how important each is to the operation of the railroad. JB feels pretty strongly about the importance of giving the commuter service that is safe, comfortable and reliable, and hopes Zero Defects will help achieve that goal. He puts the need for service reliability in pretty plain terms when he asks the employees to consider if they would want to purchase a car that was 5% defective, or if they would complain about a utility whose service was off 5% of the time.

RAILWAY AGE A CENTURY AGO—In this column Feb. 21 we asked if readers would be interested in having us publish reproductions from our predecessor paper of 100 years ago. There has been a lot of favorable response. One from a general foreman, recently promoted after 18 years in the M/W department: "I answer yes, because, like a lawyer must refer to old cases for clues to help him decide present cases, so we too would profit greatly from past opinions, decisions, and future outlooks of the day that were not carried out, possibly bringing us to the position we are in today—not too bad off, but by far not the best or not 'on top' for an industry as great as the one we are in." He states he is looking forward to an appointment to assistant supervisor of track. I'll bet he makes it, and I hope he does. The idea of the reproductions is under consideration.

teamwork with railroads to produce firsts: CF&I Service in Steel



Over the years CF&I has worked with Western railroads to develop new standard rail sections (136, 119, and 106 lb.) and fittings, basic oxygen steel and high silicon (Hi-Si®) rail. These new sections have been designed to incorporate additional stiffness and strength in rail to meet the demand of ever increasing speeds and heavier freight loads. Hi-Si steel was specifically engineered to reduce metal flow and rail head abrasion resulting from excessive wheel loads on curves and grades, and to retard gauge corner shelling—all important innovations devoted to the expanding railroad industry.

First and only manufacturer rolling wide flange beams West of the Mississippi, CF&I supplies other hot rolled carbon steel products, including I and H beams, channels, angles, bars, UM plate, and reinforcing bars.

CF&I-Roebling cooperates with fabricators and railroads to help them make durable, economical prestressed concrete ties and bridges. As a pioneer in the manufacture and use of prestressing wire and strand, CF&I-Roebling has engineers available to help design any type of prestressed concrete structure.

CF&I-Wickwire® Double Gray®-X Wire Rope is the only wire rope *guaranteed in writing* to outlast any other manufacturer's rope. Each wire has a special coating of molybdenum disulphide for minimum internal friction and extra bending strength. That's why Double Gray-X lasts longer on tough jobs in railroad shops, yards, and on the right-of-way.

Other CF&I Products to keep pace with railroad growth: Barbed Wire • Woven Wire Fence • Fence Posts • Fence Stays • Nails and Staples • High and Low Carbon—Round and Flat Wire • Cold Rolled Steel • Welded Wire Fabric • Slings • Tubing • Cutting Edges • Galvanized Steel Strand • Made in America by The Colorado Fuel and Iron Corporation. D-425-P

CF&I STEEL

Circle 21 on reader service card

RF&P revamps Potomac Yard

(*Continued from page 26*)

priately called "The Monster" because of its tremendous size (length is 83 feet 3 inches) and its ungainly appearance, which is something like that of a praying mantis.

The carrier consists of a 21-inch wide-flange center beam and four transverse beams, two of which serve as axle beams. The latter are adjustable in length to permit the wheels to be spaced from 14 to 18 feet apart so as to straddle various types of turnouts. It is equipped with large pneumatic-tired wheels similar to those used on heavy earthmoving equipment, the front ones being of the caster type to permit the carrier to be steered and turned in tight places. It has four pairs of double-acting hydraulic rams fitted at their lower ends with rail clamps for gripping the rails of turnouts. The carrier is towed by a bulldozer or heavy tractor.

For lowering the body tracks, a Matisa undercutter will be used. It will load the excavated material into hopper cars placed on an adjacent track. This material will be used as required to build up the grades at the north ends of the tracks. The excess will be disposed of as bank-restoration material. It is expected that the undercutter will complete its work at the rate of one track per day.

● **Can set four car routings.** The hump conductor will set car routings by means of a Transcontrol route-switching system. This system will store four routings. The conductor will be able to cancel any or all stored routes. All retarders and switches will be handled by one operator. The retarder operator will be in a new tower to be constructed at a strategic location where he can monitor the entire humping procedure. The retarder operator can override the automatic route controls and operate switches and retarders manually.

The exit speeds of cars from the retarders when operating automatically will depend on car weight. The weight information will be obtained from a US&S rail located at the apex of the hump and will follow the car or cut to each retarder in the route.

Three exit speeds will be available at each retarder and automatic or manual operation may be used. The available speeds will vary at each retarder, depending on grade and curvature. Any cars that must be stopped and held will be halted in the group retarders.

Raco rail-surface oilers will be installed on the lead to each group. The oilers, using a mixture of kerosene and diesel fuel oil, increase car rollability and permit lower exit speeds from the group retarders.

● **Presence detectors, too.** RCA presence detectors will be installed at all switches instead of track circuits to prevent a switch being thrown under a car or locomotive. Single-rail track circuits will be installed on each track to indicate clearance on the retarder-control machine.

Commenting on the project, L. B. Cann, Jr., RF&P's chief engineer, said: "This work will cost about $1.2 million, but it will give us a modern yard at moderate cost. We believe our work procedure minimizes the interruptions to yard operation. Also, the weight-responsive retarders use ordinary carbon-steel rails which are planed for brake shoes instead of manganese-steel shoes and they will be easier to replace and maintain."

The work was started in September 1965 and the completion date has been set for July 1, 1966. All work is being carried out by railroad forces. ■

SPENO

BALLAST CLEANING SERVICE and RAIL GRINDING SERVICE

"Just Ask the Railroads That have used us"

FRANK SPENO RAILROAD BALLAST CLEANING Company, Inc.
306 North Cayuga Street, Ithaca, N. Y.
Clark Street, East Syracuse, N. Y.

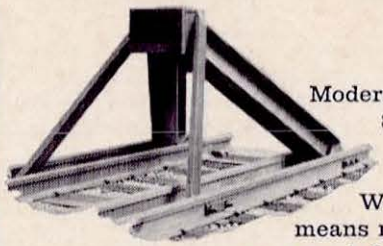
SPENO INTERNATIONAL, S. A.
20 Parc Chateau Banquet, Geneva, Switzerland
(For Operations Outside the North American Continent)

THE HOLDEN COMPANY, Limited
614 St. James Street, Montreal, P. Q., Canada
(Sales Representative For Canada)

Circle 22 on reader service card

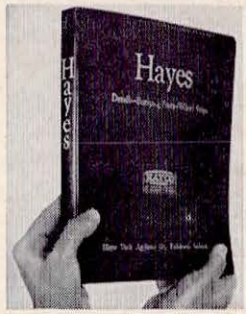
Hayes

ALL-STEEL Bumping Posts



Modern as panel track—80% pre-assembled for lowest installed cost. Welded steel design means maximum strength per pound. One of six standard Hayes Types will meet your car-stopping requirements exactly.

Free —leatherette ring-binder catalog of world's most-specified derails, bumping posts and wheel stops (including periodic supplement service). Write on letterhead.



Specialists since 1903 in side track security.

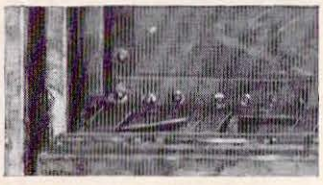
Hayes Track Appliance Co.

RICHMOND, INDIANA 47374

Circle 23 on reader service card

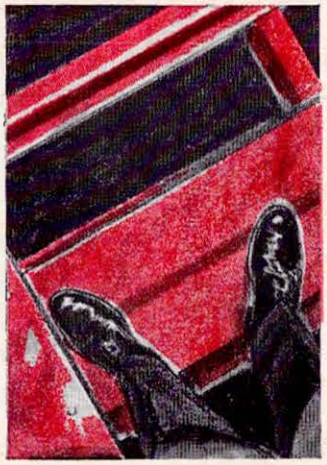
Go stand in the corner!

That's the place to judge the build of a box car. That's where everything comes together . . . where you can spot the squareness, straightness, strength and workmanship. Look closely.

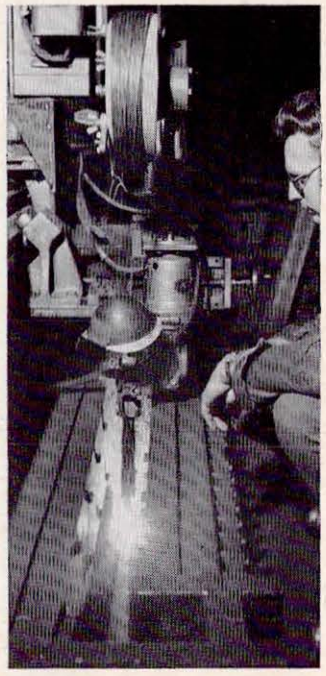


Right in front of your eyes, sides are riveted to the ends. Any extra rivet holes cost you money. More so if your men drilled 'em when the originals didn't line up.

Peek past your feet at the welded underframe. Stringers straight and square to the sill? How 'bout the center sill weld? A submerged arc doesn't need any joint preparation. Costs less for this reason, but is strong and smooth . . . gives 80-100% penetration.



Now stick your head way back in the corner and ease your eyes along the side. Notice welding stress patterns are kept to a minimum. Berwick engineered automatic, low-heat burn-through equipment to eliminate 'em. This equipment also eliminated the cost of welding both sides. Check the special steel plate at the door opening.



Strength, straightness, rigidity and precision . . . that's what you'll see in a good car component. That's also first and forever with our "old-style" metal craftsmen at Berwick. Pride runs deep in fourth generation car builders. Armed with new methods and equipment we're more than ready to take a cut at the competition.

Next time you're after bids on car components, let us back you into a corner of a Berwick box car and show off our stuff. Phone or write.

Berwick Forge and Fabricating Corporation

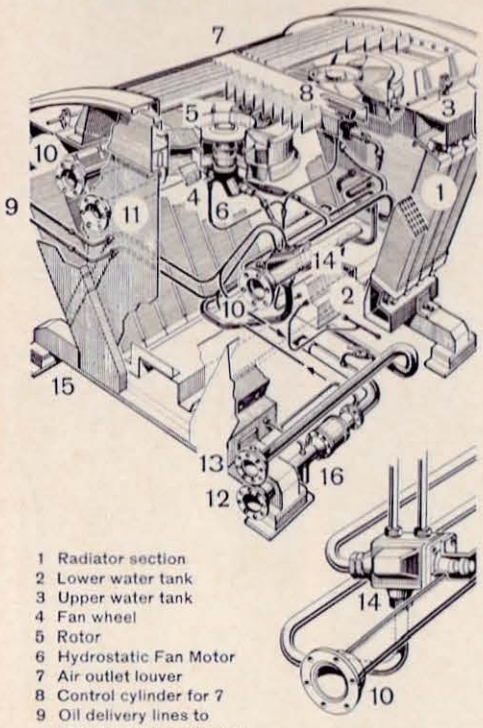
BERWICK, PENNSYLVANIA

Chicago office: 80 East Jackson Blvd.

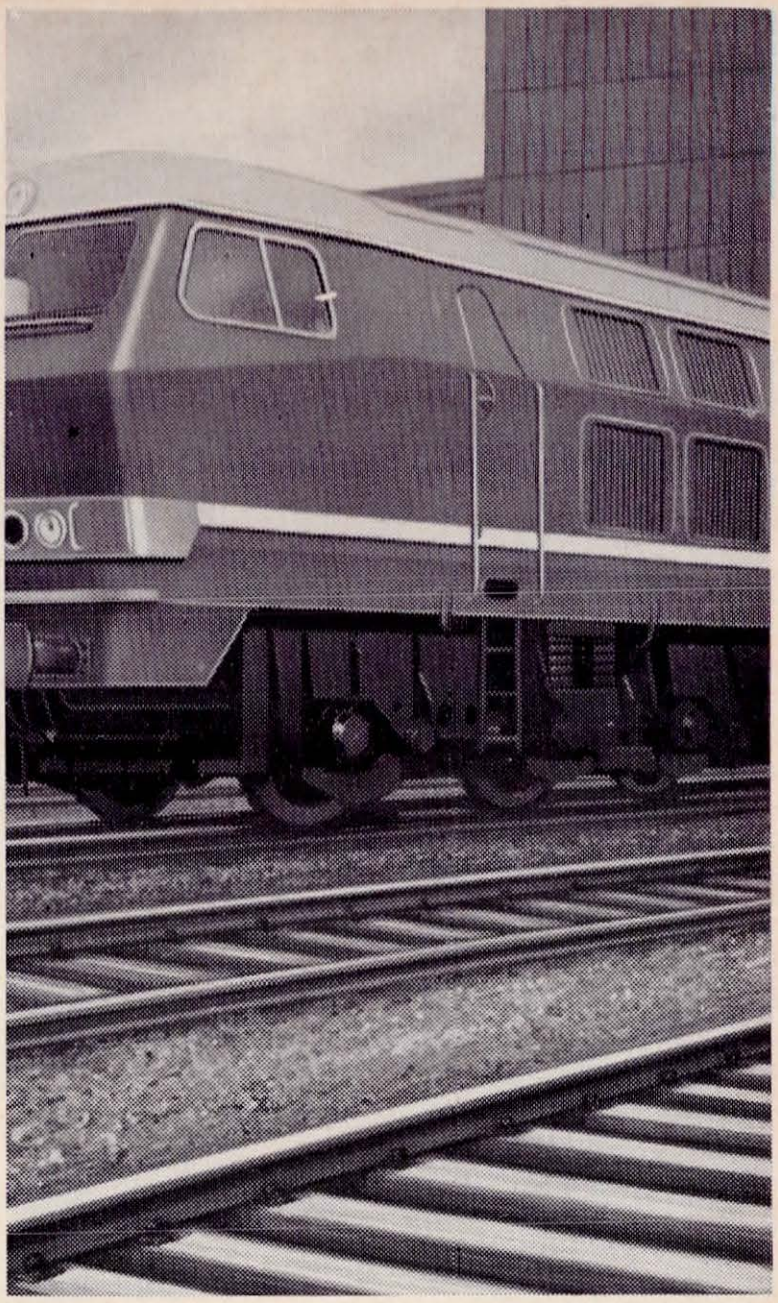
Circle 24 on reader service card

BEHR

Cooling Units with Hydrostatic Fan Drive



1 Radiator section
2 Lower water tank
3 Upper water tank
4 Fan wheel
5 Rotor
6 Hydrostatic Fan Motor
7 Air outlet louver
8 Control cylinder for 7
9 Oil delivery lines to lateral air intake louvers
10 Coolant inlet main circuit
11 Coolant inlet secondary circuit
12 Coolant outlet main circuit
13 Coolant outlet secondary circuit
14 Fan controller
15 Radiator support with elastic suspension
16 Check valve



BEHR

at the Hanover Fair in Hall 1 Stand 113

Sixty Years of Achievement

Back in 1905, Julius Friedrich Behr founded the "Süddeutsche Kühlerfabrik" in Stuttgart-Feuerbach, Germany. The company bearing his name has been serving the automotive industries for 60 years. Behr's perseverance in promoting technological advancement in the field of automotive cooling, heating and ventilation has won his company world-wide repute and made it rise to its present importance.

SÜDDEUTSCHE KÜHLERFABRIK JULIUS FR. BEHR 7 STUTTGART-FEUERBACH MAUSERSTR. 5

Circle 25 on reader service card

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended March 5 totaled 544,639 cars, the Association of American Railroads announced on March 10. This was an increase of 8,660 cars, or 1.6%, compared with the previous week; an increase of 12,981 cars, or 2.4%, compared with the corresponding week last year; and an increase of 38,359 cars, or 7.6%, compared with the equivalent 1964 week. Ton-miles generated by carloadings in the week ended March 5 are estimated at 13.8 billion, an increase of 9.3% above the corresponding week of 1965, and 14.8% above the 1964 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Mar. 5

District	1966	1965	1964
Eastern, including Allegheny and Pocahontas ..	225,903	228,214	203,728
Southern	110,757	107,320	101,706
Total Eastern and Southern Districts	336,660	335,534	305,434
Northwestern .	58,921	58,055	58,394
Central Western	108,284	101,695	105,908
Southwestern .	40,774	36,374	36,544
Total Western Districts	207,979	196,124	200,846
Total All Roads	544,639	531,658	506,280
Commodities:			
Grain and Grain products	55,946	44,591	48,798
Livestock	1,645	2,320	2,275
Coal	106,813	100,046	95,066
Coke	8,531	8,875	6,819
Forest Products	37,117	36,692	36,447
Ore	17,701	21,543	15,785
Merchandise l.c.l.	6,516	10,043	13,757
Miscellaneous .	310,370	307,548	287,333
Mar. 5	544,639	531,658	506,280
Feb. 26	535,979	504,689	518,408
Feb. 19	537,702	529,594	502,601
Feb. 12	534,350	512,582	516,132
Feb. 5	487,617	501,186	516,438
Cumulative total, 9 weeks	4,743,095	4,693,706	4,652,274
Estimated revenue ton-miles (billions) 9 weeks	119.6	111.4	110.7

PIGGYBACK CARLOADINGS.—U.S. piggyback loadings for the week ended Feb. 26 totaled 20,691 cars, carrying 34,529 trailers, compared with 18,706 cars, carrying 29,721 trailers, in the corresponding 1965 week. Loadings for 1966 up to Feb. 26 totaled 160,482 cars, carrying 263,769 trailers, compared with 144,-434 cars, carrying 234,634 trailers, in the corresponding period of 1965.

IN CANADA—Carloadings for the seven-day period ended Feb. 21 totaled 74,367 cars, compared with 76,231 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
Feb. 21, 1966	74,367	26,037
Feb. 21, 1965	69,632	24,190
Cumulative Totals		
Feb. 21, 1966	519,549	181,492
Feb. 21, 1965	486,875	169,861

FREIGHT-TRAIN CARS

► *Great Northern.*—Ordered 100 85-ton insulated box cars equipped with cushion underframe and 10½-ft plug doors, and 100 70-ton insulated box cars equipped with shock-control devices and 10½-ft plug doors from Pacific Car & Foundry. Deliveries are scheduled to begin in November.

► *Frisco.*—Will construct 85 auto racks for flat cars leased from Trailer Train. The racks will be built at Springfield, Mo., company shops for August delivery and will cost $562,000. The order will raise the number of auto-rack cars in Frisco service to 739.

NEW FACILITIES

► *Atlantic Coast Line.*—Ordered a Traffic Control Center from Union Switch & Signal Division of WABCO for installation at Rocky Mount, N. C.

► *Chicago & North Western.*—Ordered Rolkode coded interlocking equipment from General Railway Signal Co. for control of interlocking at Ames, Ia. The control machine will be located at Boone, Ia.

► *Denver & Rio Grande Western.*—Ordered Type J CTC equipment from General Railway Signal to add controls between Grant Tower, Salt Lake City, and Ogden, Utah, on the Ogden to Utah Railway Junction installation.

► *Detroit, Toledo & Ironton.*—Ordered retarder classification yard equipment from American Brake Shoe for installation at Flat Rock, Mich., near Detroit. In addition to semi-automatic retarder controls, the 23-track yard will be equipped with an automatic route switching system.

► *Frisco.*—Ordered equipment and materials for a remote control interlocking at Tulsa, Okla., from Union Switch & Signal Division of WABCO.

► *Missouri Pacific.*—Ordered remote control equipment for the Ohio Avenue interlocking in St. Louis, Mo., from Union Switch & Signal Division of WABCO. The order includes power switches and signals and related equipment, as well as engineering and materials service.

► *New York Central.*—Ordered electronic overlay track circuit equipment from General Railway Signal for the automatic control of gates and flashers at some 45 highway crossings in the Western District.

► *Northern Pacific.*—Ordered Type K centralized traffic control equipment from General Railway Signal to expand their Spokane, Wash.-Tuscor, Mont., installation to Paradise, Mont.

► *Southern Pacific.*—Ordered retarders and other yard control equipment from American Brake Shoe for installation at a 12-track yard at Los Angeles, Calif. In this installation, a retarder will be installed on each classification track.

YOU OUGHT TO KNOW

N&W to expand yard facilities: The booming automobile market and constantly increasing piggyback traffic are causing a pinch for space in some railroad facilities. Norfolk & Western is one road that's planning to give itself more working room through expansion of piggyback or multi-level auto facilities at Buffalo, St. Louis, Detroit and Toledo. The total bill will come to about $750,000. Buffalo's Bison Yard will be expanded an additional 16 acres for auto parking, while at St. Louis a car storage and repair installation is planned near auto loading docks. Detroit and Toledo will get additional TOFC facilities.

Saving a right of way: ICC Examiner James Perrin has approved the Washington & Old Dominion's application to cease operations on its 48-mile line in northern Virginia. Pending final approval, however, there's a scramble on for the valuable W&OD right of way. One Virginia utility wants it very much, but may be edged out by the Northern Virginia Transportation Commission, now planning suburban transit facilities around Washington. Said one NVTC official: "There's a $70 million right of way out the window if this goes through. We're going to appeal the Examiner's decision."

Something 'on the house': Last week, passengers on New York Central's "20th Century Limited" got a pleasant surprise when they sat down to dinner. The railroad began serving complimentary wine and fruit with meals, offering a choice of New York State burgundy or sauterne during dinner and a tray of fresh fruit after the dessert course. The road feels that because of travel abroad, more Americans are becoming wine conscious. "And this," says NYC dining service manager A. H. Smith, "has prompted us to offer our guests an added dining pleasure 'on the house.' "

NCTA picks an architect: The National Capital Transportation Agency has chosen Harry Weese as consulting architect to help design its forthcoming rapid transit system. Weese's firm is responsible for such notable projects as the U.S. Embassy in Ghana, the Arena Stage in Washington, and astrophysics laboratories in Colorado. Joked Walter J. McCarter, NCTA administrator: "He'll take instructions from me—and maybe Lady Bird's beautication committee."

Railroad equipment auction: The Defense Department will offer a $65,000 diesel electric locomotive and two locomotive cranes, one originally worth $55,000 and the other, $35,860, at an auction March 30 in the Sheraton Hotel, Philadelphia, Pa. The railroad equipment is among 313 government surplus items to be disposed of in the sale.

GATX boosts spending: General American's capital expenditures last year totaled more than $52 million. But, according to Chairman T. M. Thompson and President Spencer D. Moseley, additions to the company's lease fleet and expansion of manufacturing facilities this year "will require a higher rate of capital investment." Capital additions to a tank-car plant at Sharon, Pa., General American's top officers say, will increase capacity of the facility and "make it the largest and most efficient of its type in the world."

Railroad station for sale: Jersey Central's Broad Street passenger station in Newark, N.J., is being sold by the railroad. Located in the heart of Newark, the property will become surplus as far as rail operations are concerned when Jersey Central passenger trains are rerouted to Pennsylvania Station, Newark, under a new operating plan expected to go into effect late this year.

Truck tonnage: Intercity truck tonnage in the week ended Feb. 26 was 2.1% below that of the previous week, and 11.6% ahead of the volume in the corresponding week of 1965, according to American Trucking Associations.

Current statistics

Net Income	
12 mos., 1965	$815,000,000
12 mos., 1964	694,000,000
Carloadings, revenue freight	
9 wks., 1966	4,743,095
9 wks., 1965	4,693,706
Freight cars on order	
Feb. 1, 1966	45,754
Feb. 1, 1965	36,355
Freight cars delivered	
1 mo., 1966	7,725
1 mo., 1965	6,130
Serviceable cars	
Feb. 1, 1966	1,400,413
Feb. 1, 1965	1,396,720

Ever play nostalgia?

Nostalgia is probably the most popular game in the world with communications men. Get a couple of guys who have been in the business a long time. You sit around and drink coffee. One of you starts by saying: "Remember when . . .?" You take turns telling about the Good Old Days of open wire.

But there is nothing nostalgic about an open wire line. Here at Lenkurt, it's still a definite part of our present *and* future. For, while we are specialists in creating the most advanced types of communications equipment, we are still in the open wire carrier business. We manufacture and supply five different open wire systems to customers all over the world.

So, whatever your need in the way of open wire carrier, we have the proper system in its most modern, up-to-date form, and completely compatible with your existing plant.

Why do we build five systems? Because that many are required to make the most efficient use of open wire facilities. But also because at Lenkurt we are committed to the belief that we should continue making equipment as long as our customers have a need for it. That's why, when you buy Lenkurt equipment, you can always be sure that you are buying more than a piece of hardware; you are purchasing Lenkurt's heritage and reputation for quality and continuity. And that's never out of date.

Lenkurt Electric Co., Inc., San Carlos, Calif. Other offices in Atlanta, Chicago, Dallas, and New York City.

LENKURT ELECTRIC

SUBSIDIARY OF
GENERAL TELEPHONE & ELECTRONICS GT&E

Rolling stock speaks up

Cars and locomotives identify themselves quickly and accurately with G-E automatic car identification (ACI). It so improves manpower and equipment efficiency that industry estimates show investment payback in two to four years.

General Electric ACI uses no visual scanning—snow, fog, ice, or dirty atmospheres can't bother it. Almost two year's testing on an eastern railroad proved this. And reliability tests showed a 99.95% accuracy. Car markings covered with spillage from contents don't matter. Even unmarked cars are recorded.

HOW IT WORKS

A compact Dezignator* coding unit under each car electronically responds to frequency pulses from a wayside scanner as the car passes over a pick-up unit between the rails. (Car height, shape, or track settling won't affect operation. Critical focusing or adjustment is unnecessary.) Wayside equipment decodes the pulses, and the car number can be instantly transmitted to the yard office for data processing in train make-up, car utilization, per diem accounting, car tracing, and car mileage revenue.

COMPONENTS

One Dezignator coder mounts **beneath** each car away from vandals and trackside damage. Operating from —66 to 150F, the coder withstands 100 G's shock and damage from flying ballast or other objects. What's more, the Dezignator unit is permanent. There's no periodic replacement for deterioration from sun, rain, and wind.

Equally durable, the pick-up unit withstands damage from objects suspended or falling from cars. Standing rail-high, it has no moving parts, requires no maintenance and responds to cars moving in either direction at speeds up to 60 mph.

The wayside equipment decodes the signals, records them, and reads out three-letter owner's marks and six-digit car numbers. Train passing time and direction can also be provided. Only 115 volt, 60 cycle wayside power is required. General Electric GE/PAC process computers are easy to apply to this ACI system for data processing.

Let us help you increase efficiency, car identification speed, and accuracy in your yard. Contact your nearest G-E Sales Engineer. Or write for bulletin GEA-7646 to Section 787-04, General Electric Company, Schenectady, N. Y.

Industry Control Dept., Salem, Virginia.

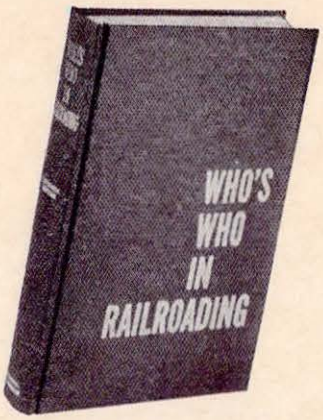
** Trade-mark of General Electric Company*

Progress Is Our Most Important Product

GENERAL ELECTRIC

Circle 27 on reader service card

The latest edition of one of the most effective sales aids available to the railway equipment sales executive . . .



WHO'S WHO IN RAILROADING

IN NORTH AMERICA

Here is the most recent printing of a standard volume, the "Blue Book" of the North American railway industry. It contains approximately 6,000 entries, of which over 1,500 are new. All entries carried over from the previous edition have been checked and revised to include promotions, transfers, and other important changes. The listings are authoritative, comprehensive, and alphabetically arranged for easy reference. In addition to railway executives, they include leaders in the railway equipment and supply industries, railway labor leaders, members of regulatory bodies, ICC practitioners, transportation economists, and specialists in railway finance.

Complete information is given for each biographee — present title (or position) and business address, home address, age, career (including railroad, professional, military), technical society memberships, public offices held, books and articles written, and much more. The detailed data contained in this unique volume will be widely used by all who have frequent contacts with the railway and railway supply industries.

— — — — — — — — CLIP THIS COUPON — — — — — — — —

Simmons-Boardman Books
30 Church St., New York, N.Y., 10007

Please send.....copies of WHO'S WHO IN RAILROADING, 15th Edition, at $20 each. I understand that unless I am fully satisfied, I may return the book(s) within 10 days and my payment will be refunded. Check ( ) money order ( ) enclosed.

NAME .....

STREET .....

CITY .....

STATE ..... ZIP .....

Advertisers' Index

ACF Industries, American Car & Foundry Division 28-29
American Oil Company 14-15
American Steel Foundries, Inc., Amsted Industries ..... IFC
Berwick Forge & Fabricating Company 45
Cardwell Westinghouse Company 6
Colorado Fuel & Iron Corporation, The 42-43
Dow Chemical Company, The 17
Fairmont Railway Motors, Inc. 4
Foster Company, L.B. 33
Gardner Engineering Service 37
General Electric Company, Industry Control Dept. 50
General Electric Company, Locomotive & Car Equipment Division 35
Hayes Track Appliance Company 44
Hitachi, Ltd. ..... BC
Kerite Company, The ..... IBC
Kinnear Manufacturing Company, The 36
Lenkurt Electric Company 49
Mannix International, Inc. 39
Midwest Steel Corporation 37
Miller Spring & Manufacturing Company, Henry 9
Motorola Communications & Electronics, Inc. 27
National Lead Company, Magnus Metal Division 18
Poor & Company 3
Radio Corporation of America 30B
Railway Maintenance Corporation 41
Rust-Oleum Corporation 38
Speno Railroad Ballast Cleaning Company, Inc., Frank 44
Sperry Rail Service, Division Automation Industries Inc. 13
Suddeutsche Kuhlerfabrik 46
Tamper, Incorporated 16
Texaco, Incorporated 30A
Timken Roller Bearing Company, The (Railroad Division) 10

The RAILWAY EDUCATIONAL BUREAU
1809 Capitol Ave., Omaha, Nebr. 68102
OFFERS Correspondence Technical Training—
Car Dept. Work & Car Inspection
Diesel Locomotive Maintenance
Supervision
Railway Signaling
Write for Descriptive Literature

TRACK SUPERVISOR

Chicago based Belt Railway seeking an experienced Maintenance of Way Track Supervisor. Excellent salary based upon past accomplishments and experience, along with exceptional fringe benefits. Position requires no overnight traveling. Age to 45. Submit resume indicating work experience in complete confidence to:

BOX NO. 167

Railway Age, 14 E. Jackson Blvd.
Chicago, Illinois 60604

(An Equal Opportunity Employer)

FOR SALE or LEASE

6—1500 H.P. Alco diesel elec. road switchers. MU controls, built 1950. Bargain.

1200 H.P. EMD Class NW-2 switcher, new 1948.

40 Ton American 408 diesel locomotive crane, new 1944, rebuilt.

WHISLER EQUIPMENT CO.
1908 Railway Exchange Bldg.
St. Louis 1, Mo.

Advertising Sales Department

C. J. Fisher, vice president—sales, New York

New York, N. Y. 10007,
30 Church St., WOrth 4-3060
J. S. Vreeland—vice president; sales manager
W. A. Cubbage—district manager
Leonard Preyss

Chicago, Ill. 60604,
14 E. Jackson Blvd.
(312) 427-3501
J. R. Thompson—vice president;
K. F. Sheeran—regional vice president;
Walt W. Hutchinson—district manager

Lakewood, Ohio 44107,
12700 Lake Ave., Apt. 1310
(216) 226-8038
Harry H. Melville—vice president

Pittsburgh, Pa. 15219, Room 720,
(412) 471-7871
Frick Building
Michael C. Shea

Atlanta, Ga. 30309,
22 Eighth St., N. E.,
TRinity 2-6720—J. S. Crane

Dallas, Tex. 75219,
3915 Lemmon Ave.,
LAkeside 1-2322
Joseph Sanders

Los Angeles, Cal. 90017,
1313 West Eighth St.
HUbbard 3-8414
Fred Klaner, Jr.

San Francisco, Cal. 94133,
515 Pacific Ave.
GArfield 1-7004
Lewis A. Vogler & Co.

London S. W. 1, England
TRafalgar 6318
67/68 Jermyn St., St. James's
Max F. Holsinger, Peter Clifton, F. E. Mizen

Manchester 22, England
Haletop
Wythenshawe Civic Center
Ian Goulden

Paris, 16e., France
46 Boulevard Exelmans
Michel Lemaire

4 Düsseldorf-Rath
Eitelstrasse 32
Max F. Holsinger, E. Hillerbrand, Herbert Haibt, C. W. Schmidt

Tokyo, Japan
Sun Gain Shia, Ltd.
Shiba Nikkatsu Bldg.
13, Shiba Park
Minato-Ku
C. H. Yiu, Managing Director

Duane C. Salisbury, executive vice president, director of sales, New York

THE ACTION PAGE

More science needed in track inspection

Except possibly for a few of the more affluent railroads, track maintenance has always been a dollar-pinching matter. Fortunate indeed has been the chief engineer whose allotments have been adequate to cover entirely his requirements for ties, rail, ballast, surfacing and other track-maintenance items. Much more common is a situation in which the chief engineer has the problem of deciding how to dole out, or divide up, an amount of money that, in varying degrees, falls short of meeting his needs.

Superficially, it might appear that the problem would be present only when the tide of financial misfortune is running against the railroads. Not so. Even in times of relative prosperity railroad managements, with an eye on their responsibilities to shareholders, are not about to deal out maintenance funds with a lavish hand. They reason, and properly, that a function of engineering is to figure out ways of making do with something less than the engineers may feel is needed.

The problem, then, for the engineers becomes one of seeing that money made available for track maintenance is spent in such a manner as to produce optimum results. This problem has several facets. One has to do with the way in which the work is done. In this area the accomplishments of the American railroad engineer can be described only in superlative terms. In adapting and applying mechanical methods to every type of track work, thereby assuring minimum use of man-hours, he has shown himself to be in well-nigh perfect command of the situation created by the rising cost of labor.

How should money be spent?

Another facet of the problem has to do with the methods used in deciding where and for what purpose the money is to be spent. Except for a small handful of railroads these methods have changed little, if at all. The primary basis for decision-making in this area can best be described as judgment based on human observation and inspection qualified or tempered by knowledge as to the service life of materials.

Some engineers, whose number is showing a steady increase, are beginning to express serious doubts that the empirical methods used by most roads can be justified in these days when most other problems and procedures have succumbed to more scientific analysis. They are mindful, for example, that decisions regarding what sections of track are most in need of corrective maintenance are frequently made on the basis of impressions obtained by riding trains or other vehicles over the sections in question.

Another point to be considered is that inspection of an entire railroad is seldom made by a single individual. Different divisions or other geographical subdivisions are inspected by different people, thereby presenting the impossible task of correlating their findings in such a way that the available money goes to the territories most in need of attention.

The equipment is available

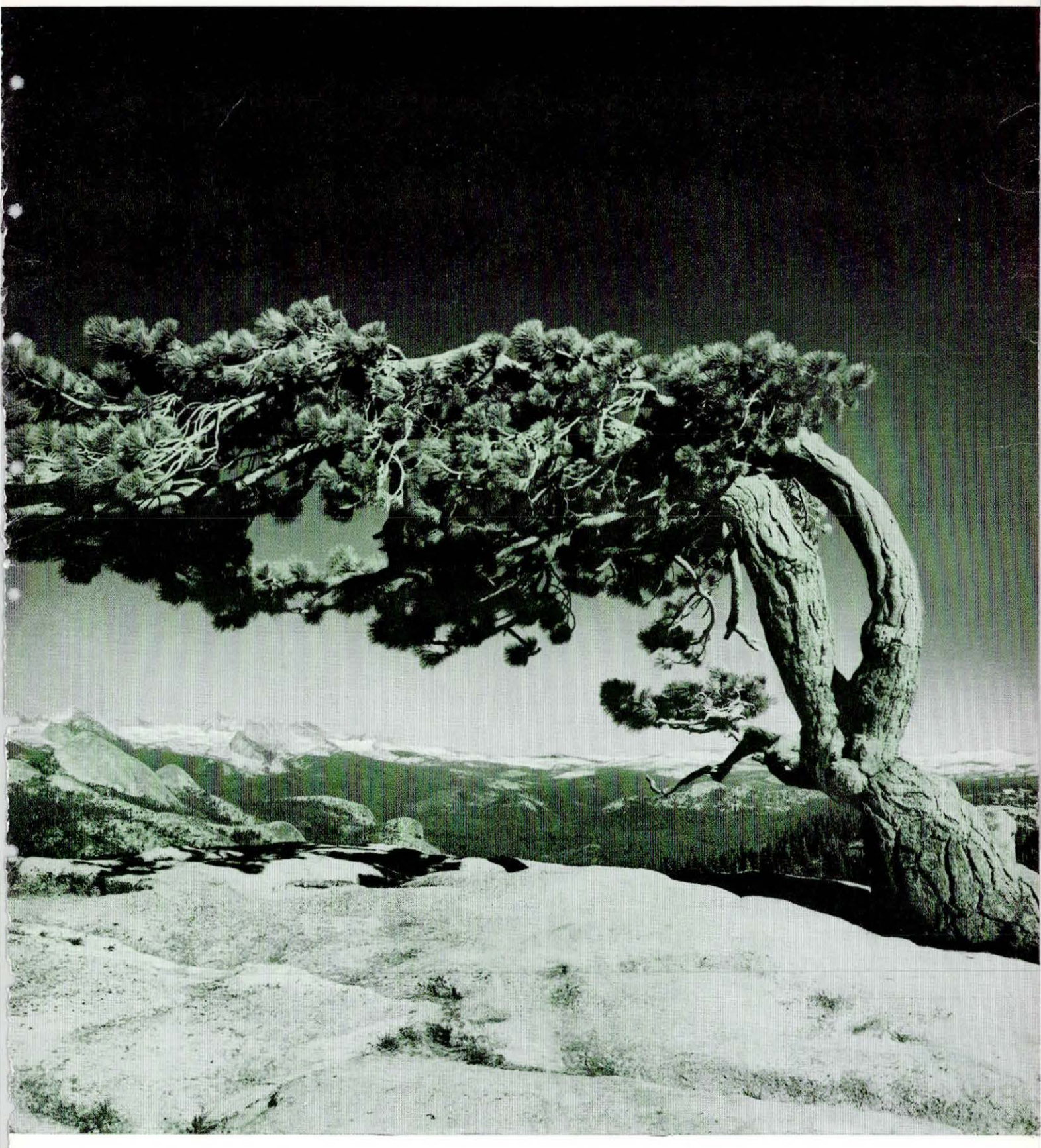
Fortunately, the tools are at hand for putting track inspection on a more scientific basis. And procedures have been worked out for processing the results to produce values that provide positive guidance for those who have the responsibility of deciding where the dollars are to go. Such systems must necessarily be based on the use of a suitable mechanical track-inspection car or device, one that preferably provides tracings of the track condition as indicated by variations in gauge, cross level and alignment. A truly sophisticated system will involve examination of the tracings to determine the frequency of variations from set tolerances and finally the computerization of the resulting figures to obtain priority values for each mile of track inspected. It is these values that are used as a guide in assigning maintenance funds. Details of a system such as this have been worked out on the B & O.

For smaller properties, where resort to electronic data processing may not seem indicated, the Boston & Maine is using a system in which data obtained from the inspection-car tracings are analyzed graphically.

A somewhat different approach has been devised on the New York Central. The business car assigned to C. T. Popma, the Central's assistant vice president-engineering, has been fitted with a device, developed by the road's Technical Research department, which produces a digital record of variations in cross level.

It is thus apparent that the first timid steps have been taken in the direction of putting track inspection and analysis on a scientific basis. The results obtained are certain to be followed with interest.

Only a few products of man or nature have retained so much character after so many years.



Kerite

the cable that lasts...and lasts...and lasts...

The Kerite Company, 30 Church Street, New York, New York 10007

WHEN WE SAY EXPRESS WE MEAN EXPRESS!

From Tokyo to Osaka (or the other way around) in 3 hours and 10 minutes. That's still faster than you can fly the 320 miles, considering the time it takes just to get to and from the airport.

And what a relaxing way it is to travel. The train may hurry along at 125 mph, past Mt. Fuji and Lake Biwa, but you could easily imagine yourself at home in your favorite chair. The ride is so smooth that the only way to know what it feels like to be on rails at that speed is to stroll into the snack car and look at the speedometer!

Trains, of course, will never replace planes entirely. But the New Tokaido Express is certainly proof that the world is big enough for both of them.

Main Products, Rolling Stock Division: AC & DC Electric Locomotives, Diesel Hydraulic Locomotives, Diesel Electric Locomotives, Hitachi-M-A-N Diesel Engines, AC & DC Electric Cars, Diesel Cars, Passenger Coaches, Freight Cars and Wagons, Special Rolling Stock and Auxiliaries Equipment

HITACHI
Hitachi, Ltd. Tokyo Japan

Circle 29 on reader service card

MAR 14